Cuts Pump Upkeep

COST DOWN MORE THAN HALF IN 4 YEARS SERVICE AT MICH. CITY PLANT

SAYS A. C. LOHSE, General Power Engineer, Pullman-Standard Car Manufacturing Company — "Maintenance costs on our old pump were sky-high, so in March, 1945, we installed this *Electrifugal* pump to move condensate from our compressors and hydraulic pumps. It has run 16 hours a day, five days a week with only routine maintenance and one repacking. Cost per gallon is less than half what it was and performance is much more dependable."

This is the kind of dependable, cost-lowering service you can get from *Electrifugal* pumps. Motor and pump are mounted on *one* shaft in *one solid frame* for maximum rigidity. Feet are wide spread for firm support. Bronze ring protects casing from wear by impeller and is easily replaced when required.

Every *Electrifugal* pump is tested at the factory. Performance is guaranteed.

Allis-Chalmers makes hundreds of pumps for many types of service. For full information, see your A-C Authorized Dealer or District Office, or write for Bulletin 52B6059E. Also in Sweet's. A 2640

ALLIS-CHALMERS, 1018A SO. 70 ST. MILWAUKEE, WIS.

Sold . . .
Applied . . .
Serviced . . .

by Allis-Chalmers Authorized Dealers, Certified Service Shops and District Offices throughout the country.

MOTORS — ½ to 25,000 HP and up. Matching Allis-Chalmers Control.

TEXROPE — Belts in all sizes and sections, standard and Vari-Pitch sheaves, speed changers.

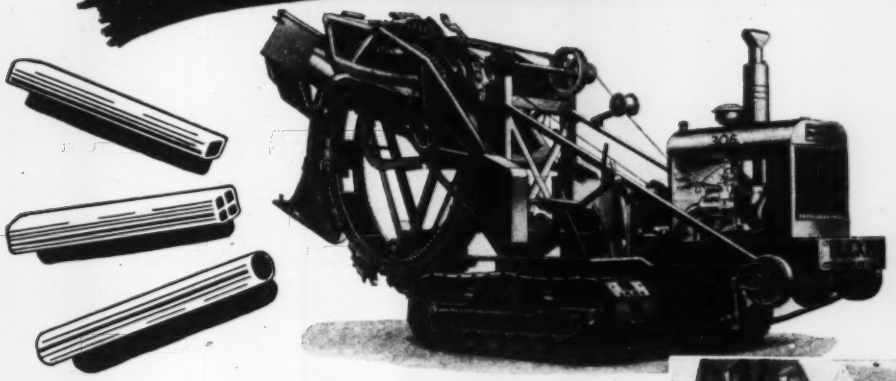
PUMPS — Integral motor and coupled types. Sizes and ratings to 2500 GPM.

Electrifugal, *Texrope* and *Vari-Pitch* are Allis-Chalmers trademarks.

A-C

ALLIS-CHALMERS

NEW...



Buckeye 306 UTILITY DITCHER

Out in the wide-open spaces or up against curbs and sidewalks—the NEW Buckeye 306 Utility Ditcher is equally at home, equally efficient. Rugged, heavy duty crawlers provide firm footing in all types of soils and any terrain. Yet the large bearing area (pressure is less than 5 lbs. p.s.i.) and the streamlining of projecting members is easy on parkway lawns and permits operation close to trees, fire plugs, etc.

Smaller in size than the Buckeye Model 312 Ditcher, the NEW 306 digs ditches 12" to 24" wide and up to 5½' deep. Digging speeds range from 2.3 to 20.6 f.p.m. Digs ditch fast and economically for line pipe, telephone cable conduit, sewage, gas mains, water mains, and highway drainage—see the many features as the safety cleaner—mail the coupon today for further information on the Buckeye 306.

The 401 Pony Ditcher—Smallest in the Buckeye Line — ideal for service pipe, small mains, telephone cable ditching. Digs ditch 8" wide, up to 4' deep.

The 312 — Buckeye Pipeline and Utility Ditcher. Built for those gruelling jobs. Digs ditch 16" to 30" wide, up to 6' deep.

Learn how to cut costs on Hi-Way Widening jobs! Send for NEW bulletin on the Buckeye "616" Hi-Way Widener!

GAR WOOD INDUSTRIES

FINDLAY DIVISION, FINDLAY, OHIO

Buckeye

Ditchers · Shovels · Spreaders · Finegraders

MAIL THIS COUPON NOW!

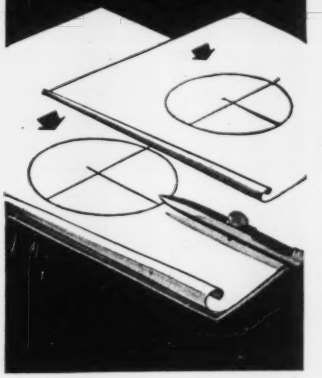
GAR WOOD INDUSTRIES, INC.
Findlay Division, Findlay, Ohio.
Please send me the new bulletin on:
☐ 306 DITCHER ☐ 312 DITCHER
☐ PONY DITCHER ☐ 616 HI-WAY WIDENER

Name .....

Company .....

Address .....

Tracing cloth that defies time



● The renown of Imperial as the finest in Tracing Cloth goes back well over half a century. Draftsmen all over the world prefer it for the uniformity of its high transparency and ink-taking surface and the superb quality of its cloth foundation.

Imperial takes erasures readily, without damage. It gives sharp contrasting prints of even the finest lines. Drawings made on Imperial over fifty years ago are still as good as ever, neither brittle nor opaque.

If you like a duller surface, for clear, hard pencil lines, try Imperial Pencil Tracing Cloth. It is good for ink as well.

IMPERIAL TRACING CLOTH

SOLD BY LEADING STATIONERY AND DRAWING MATERIAL DEALERS EVERYWHERE

ENGINEERING NEWS-RECORD

VOLUME 142 APRIL 7, 1949 NO. 14

WALDO G. BOWMAN
Editor

DEPARTMENTS

The Construction Week	5	Engineering Schools	40
Editorials	9	Elections and Activities	42
Developments Abroad	21	Manufacturers Publications	42
Men and Jobs	28	New Products	45
Municipal Affairs	35	Material Prices	53
Obituaries	39	Construction Reports	65

Construction Business 96

THE COVER PICTURE

Head of one of the nation's newest consulting engineering firms, conceded by many to have had one of the fastest growths on record, Theodore T. Knappen has parlayed his army-engineer training, consulting experience and ability into a major force in engineering practice.

A native of Minneapolis, he graduated from West Point in 1920, and took a C.E. degree from Rensselaer Polytechnic Institute; served as an engineer officer until 1923, and later (1928-34 and 1936-37) served with the engineers in the Memphis district and as consultant and chief of the flood control section of the North Atlantic Division.

Between these assignments, he pursued a career as an expert on hydraulics and water supply, including a term as hydraulic engineer on the Hetch Hetchy water supply system for San Francisco; and as chief of the engineering division of the Muskingum Flood Control project in Ohio. He did engineering work in Venezuela from 1937 to 1942.

He formed his own firm (now Knappen, Tippetts, Abbett Engineering Co.) in 1942, and has seen it grow until today it is handling engineering assignments at Buenos Aires, Sao Paulo, Brazil; Palestine, Turkey, and India.

Number of copies this issue 44,105

Managing Editor—EUGENE E. HALMOS, JR.

Associate Editors—*New York*, V. T. Boughton (senior associate), F. S. Merritt, R. H. Dodds, J. C. Bumstead; *Cleveland*, J. R. Carr; *Chicago*, H. T. Perez; *San Francisco*, N. A. Bowers; *Washington*, V. B. Smith

Assistant Editors—*New York*, T. D. MacGregor and Arthur J. Fox, Jr.; *San Francisco*, L. L. Wise

Contributing Editor—Edward J. Cleary

Business News—Elsie Eaves, *Manager*; J. A. Mahoney, M. W. Roessler, M. Wetzel, E. M. Huber

Staff Assistants—Ethel Lyon, Louise Jacobson, Helen Chase, Elly Kirsten

Domestic News Bureau—Atlanta, Chicago, Cleveland, Detroit, Houston, Los Angeles, San Francisco, Washington. Correspondents in 71 cities in the United States, Canada and Mexico.

Foreign News Bureaus—London, Frankfurt, Paris, Moscow, Tokyo, Bombay, Melbourne, Rio de Janeiro, Buenos Aires. *Correspondents*—Athens, Rome, Caracas, Mexico City, Santiago, Shanghai, Zurich, Johannesburg and 40 other cities.

ROBERT F. HOGER
Member ABC **Publisher** Member ABP

April 7, 1949 **ENGINEERING NEWS-RECORD** Vol. 142—No. 14

Publication Office—99-129 N. Broadway, Albany 1, N. Y.

Executive and Editorial Office—330 West 42nd St., New York 18, N. Y.

Copyright 1949 by McGraw-Hill Publishing Co., Inc. All rights reserved.

Published every Thursday by the McGraw-Hill Publishing Co., Inc., James H. McGraw (1860-1948) founder; JAMES H. McGRAW, JR., President; CURTIS W. McGRAW, Senior Vice-President and Treasurer; JOSEPH A. GERARDI, Secretary; NELSON BOND, Director of Advertising; EUGENE DUFFIELD, Senior Vice-President, Publications Division; J. E. BLACKBURN, JR., Director of Circulation. Cable Address, "McGraw-Hill New York."

Subscriptions: (1 yr., 2 yr., 3 yr.) U. S. and possessions, $6, $9, $12; Pan America, $10, $16, $20; Canada $7, $11, $14; All others, $20, $30, $40.

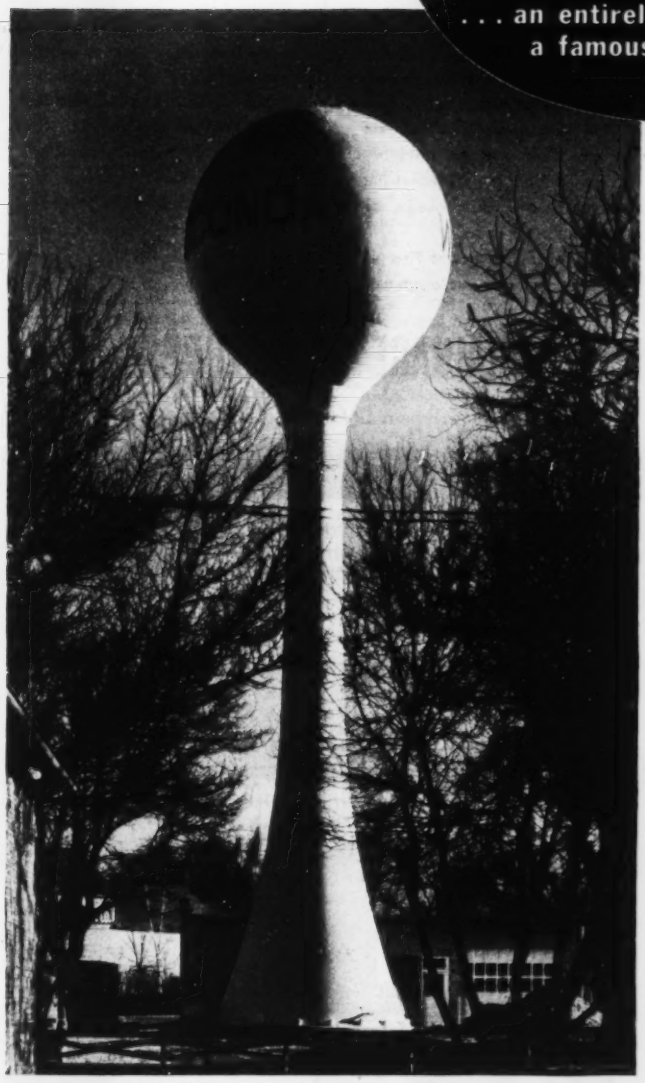
Address all communications about subscriptions to Director of Circulation. Price 35¢ per copy.

Please indicate position and company connection on all subscription orders.

Entered as Second Class matter October 29, 1936, at the Post Office at Albany, N. Y., under Act of March 3, 1879. Printed in U. S. A.

the HORTON watersphere

. . . an entirely new adaptation of a famous HORTON tank



For those elevated tank installations where graceful appearance and a modern design are important considerations — here's the new Horton Watersphere. This welded steel tank will blend in with the most progressively-designed industrial plant as well as fit into any location in a municipal water system. Now —in the new Watersphere— we've even improved on striking design. Its clean lines are unbroken slopes—both the sphere and the base are faired smoothly into the lines of the central column. There are other structural changes, too, which make all the parts of this streamlined structure accessible for maintenance. One of these changes— running the ladder inside the column and up through the center of the sphere—makes it much easier to reach the top of the tank for inspection and painting.

Watersphere**s** are built in seven standard sizes ranging from 25,000 to 100,000 gallons, in heights of 50, 75, 100 and 125 ft. to bottom. We shall also be glad to quote on larger sizes or any intermediate heights to meet your needs.

Left: A new 100,000-gal. Horton Watersphere, 75 ft. to bottom, providing gravity pressure in the water system at Wauconda, Illinois. The average daily consumption of water in Wauconda is 55,000 gals. in Winter and 110,000 gals. in Summer.

CHICAGO BRIDGE & IRON COMPANY

Atlanta, 3 . . . . . 2125 Healey Building
Birmingham, 1 . . . . . 1520 North 50th Street
Boston, 10 . . . . . 1012-201 Devonshire Street
Chicago, 4 . . . . . 2101 McCormick Building
Cleveland, 15 . . . . . 2201 Guildhall Building
Detroit, 26 . . . . . 1506 Lafayette Building
Houston, 2 . . . . . 2109 National Standard Building
Havana . . . . . 402- Abreu Building
Los Angeles, 14 . . . . . 1411 Wm. Fox Building
New York, 6 . . . . . 3311-165 Broadway Building
Philadelphia, 3 . . . . 1623-1700 Walnut St., Building
Salt Lake City, 1 . . 1512 First Security Bank Bldg.
San Francisco, 11 . . . . 1220-22 Battery St. Building
Seattle, 1 . . . . . 1312 Stuart Building
Tulsa, 3 . . . . . 1617 Hunt Building

Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY, and GREENVILLE, . In Canada: HORTON STEEL WORKS, Limited, FORT ERIE, ONT.

How profit-wise contractors make low bids

Experienced contractors know it doesn't pay to make low bids without adequate profits. Yet thousands of actual examples prove that you **can** be in a sound competitive position by taking advantage of the time, labor and money-saving features of ARMCO Corrugated Metal Pipe.

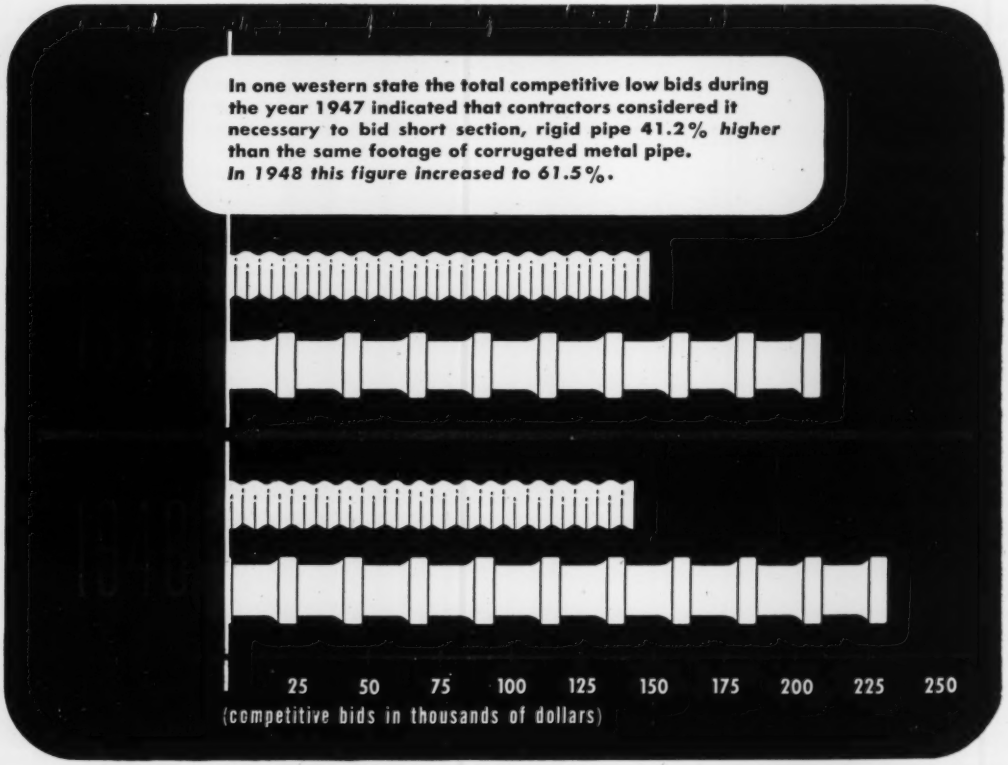
Figured on an ***installed*** basis, ARMCO Pipe saves money in many ways. Although amply strong it often weighs only one-tenth as much as more massive types. This means low handling and hauling costs. Job costs go down because unskilled labor quickly makes the installation. There is no breakage, no curing, no waste, no delay.

Individual lengths of ARMCO Pipe or PIPE-ARCH are supplied in any length that can be hauled or handled. No large and expensive equipment is needed for installation. A few men with a rope sling or a small A-frame can handle the largest structure. Trenches only have to be wide enough for men to work since there are no bells or massive joints requiring hand excavation. Connections are made with simple band couplers. End finishing is easy and inexpensive with prefabricated ARMCO End Sections.

Bid low on that next contract with ARMCO Corrugated Metal Pipe. You will find it ideal for highway, railway, airport or municipal installations. Write for complete information. Armco Drainage & Metal Products, Inc., 2015 Curtis Street, Middletown, Ohio.

Export: The Armco International Corporation

ARMCO DRAINAGE STRUCTURES


In one western state the total competitive low bids during the year 1947 indicated that contractors considered it necessary to bid short section, rigid pipe 41.2% higher than the same footage of corrugated metal pipe. In 1948 this figure increased to 61.5%.
25
50
75
100
125
150
175
200
225
250
(competitive bids in thousands of dollars)

THE CONSTRUCTION WEEK

BRIDGE BUILDERS' PYRAMID—Having rejected a bid for the substructure of its new Chesapeake Bay Bridge that was $10,000,000 over estimates (ENR March 31, p. 29) the Maryland State Roads Commission suddenly decided to ask permission (in a special bill introduced in the legislature) to negotiate the contract rather than award it to a low bidder. First planned (in 1938) to cost an estimated $16,000,000, the structure has gone up rapidly, cost-wise, along with prices and added features, until present estimates officially put the cost at $37,500,000, and unofficial guesses range upward to $60,000,000. Contracts for approaches have already been awarded.

LONGER PENN TURNPIKE?—The Pennsylvania State Senate has before it a bill to extend the famed Penn Turnpike (already stretching eastward toward Philadelphia) northwestward to the city of Erie. Introduced by Sen. C. A. Blass of Erie, the bill would provide for a toll road from Erie to the projected terminus of the turnpike at the Ohio line. At the same time, the Ohio legislature is debating a bill that would create an Ohio Turnpike Commission to build, maintain, police a 239-mi. state superhighway system, joining the Pennsylvania turnpike and the Indiana state line.

LANDSLIDE PROTECTION—Faced with serious interruptions—caused by landslides—to rail traffic that have cut down iron-ore shipments to a trickle, the Companhia do Vale do Rio Doce will probably build several subway sections along its single-track railway line, 35 miles from Vitoria, Brazil. Recent landslides on the right of way have cut down exports of Itabira iron ore (from mines 375 miles inland by rail from Vitoria) from a total of five to only two shiploads per month. Efforts to clear the landslides, with construction equipment diverted from reconstruction work elsewhere on the rail line, resulted in more slides, and engineers told railroad officials that the only permanent solution would be subway sections in the landslide area.

DANGER FROM TUBES—Fluorescent light tubes present a serious disposal problem because of the beryllium salt used, according to a warning printed in the Journal of the American Medical Association recently. Warning industrial and home users that care should be taken in disposing of the tubes—both to avoid cuts from the beryllium-coated glass and to avoid breathing in dust from the tubes—the journal cited industrial practice of breaking up discarded tubes under water.

NEW ENGLAND PLAN—In line with the traditional independence of thought in their area, the six New England governors have agreed (pending legislative approval) on a 10-year, $200,000-a-year New England Development Authority "to survey and promote the economy of all sections of New England." Unusual in this country, the authority would have broad powers to: investigate and make recommendations on the importance of natural gas to the area (now the subject of a bitter battle in Massachusetts); investigate possibilities of a New England steel industry; establish and promote textile, electric power, brass and shoe enterprises; conserve and improve marine fisheries; and "take complete action against flood damage and water pollution." Enthusiastic proponents are already talking of extending the authority's work to such matters as control of educational facilities and regulation of public utilities. Governing body would be a six-man board of commissioners—one from each state.

NO DEFICIT—The probability is that the U. S. government will wind up its fiscal year June 30 with a surplus of about $1 billion—despite reports that tax receipts are running behind last year, and Mr. Truman's own prediction (in his budget message) of a $600 million deficit. It's true collections to March 18 this year are about $800 million behind behind last—but the President figured collections would run $2.6 billion behind. So, a little arithmetic by economists still leaves a surplus of about $1 billion.

NO ALIBIS—Kentucky highway contractors no longer will be able to use the shortage of materials, equipment, repair parts or manpower as an excuse for extension of contract time. The Kentucky State Highway Department has eliminated its Special Provision for Time Extension, in effect since Dec. 14, 1945, and henceforth will take into account the possibility of such shortages in calculating contract completion dates. Then, it will be up to the contractor to deliver the job on time.

PROGRESS NOTE—In its annual report to the Secretary of the Interior, the Bureau of Reclamation noted it had let 1,400 contracts, for a total of $160 million during 1948; received $26 million in revenue from sale of electric energy; increased the irrigated land it serves by 140,000 acres.

You Don't Need to Keep your Fingers Crossed with Chlorination by W & T

The W&T Residual Chlorine Recorder gives better chlorination control in old plants as well as new.

Keeping fingers crossed over the dependability of chlorinating equipment is something that engineers who demand W&T Chlorinators can forget. They know they can forego the time honored symbol of hope-with-uncertainty and go on to other problems without worry or risk. Here's how they figure it.

W&T has a complete line of chlorinators and accessories for handling from ounces to tons of chlorine per day.

W&T has over 35 years' experience in solving all types of chlorination problems.

W&T has extensive research and development facilities to take on and solve new problems.

W&T has a large, precision machine shop which understands, from long experience, the exacting nature of chlorinator manufacturing.

W&T has a nationwide field staff to render service and technical assistance promptly and effectively.

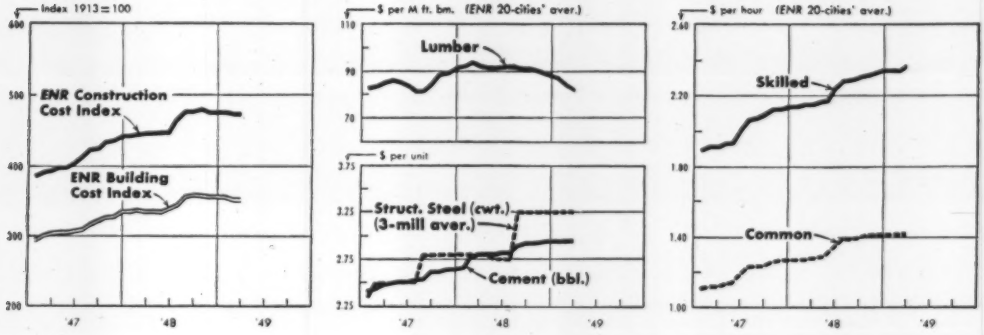
Thus, the engineers who say "W&T Chlorinators" know they have experience, dependability and sound theory behind their decision.

You'll find your W&T Representative willing and helpful on *your* chlorination problems, too. Why not call on him for your next job—instead of crossing your fingers?

WALLACE & TIERNAN
COMPANY, INC.
CHLORINE AND CHEMICAL CONTROL EQUIPMENT
NEWARK 1, NEW JERSEY • REPRESENTED IN PRINCIPAL CITIES

S-45

APRIL CONSTRUCTION BUSINESS REPORT



ENR INDEXES (1913 = 100)	Apr. '49	Mar. '49	% Change	Apr. '48	% Change
Construction Cost	473.54	474.80	0.0	443.64	+ 6.7
Building Cost	351.35	352.47	0.0	334.56	+ 5.0
MATERIALS PRICES (20-cities' average)					
Cement, bulk, per bbl	$2.980	$2.980	0.0	$2.810	+ 6.0
Structural Steel, (3-mill aver.), per cwt	3.250	3.250	0.0	2.800	+16.1
Sand, per ton	2.010	2.010	0.0	1.903	+ 5.6
Lumber, 2x4 Fir, per M ft. bm	9.740	90.870	−1.0	96.460	− 7.0
Lumber, 2x4 Pine, per M ft. bm	77.250	78.950	−2.2	88.770	−13.0
Common brick, per M	27.769	27.438	+1.2	25.500	+ 8.9
Ready-mixed concrete, per c. y	10.244	10.257	0.0	9.956	+ 2.9
Structural Clay Tile, 3x12x12 per M	130.720	130.708	0.0	123.650	+ 5.7
WAGE RATES (20-cities' average)					
Common	1.424	1.424	0.0	1.287	+10.6
Skilled (aver. 3 trades)	2.378	2.376	0.0	2.169	+ 9.6
Bricklayers	2.602	2.595	+0.2	2.343	+11.1
Structural Ironworkers	2.351	2.351	0.0	2.178	+ 7.9
Carpenters	2.183	2.183	0.0	1.986	+10.0

CONTRACTS AWARDED (thous.)	March 1949	1948	% Change†	Three Months 1949	1948	% Change†
Total U. S. (ENR reported)	$743,529	$508,096	+17.1	$1,872,439	$1,424,694	+31
Private	344,058	220,715	+24.7	947,776	655,254	+45
Public	399,471	287,381	+11.2	924,663	769,440	+20
Federal	163,317	99,093	+31.8	312,989	289,508	+ 8
ENR Const. Volume Index, '13 = 100	271	247	+ 9.7	260	217	+20
NEW CONSTRUCTION CAPITAL						
Total	503,987	280,726	+43.6	1,268,406	777,588	+63
State & Mun. Bond Sales	289,855	130,829	+77.2	655,793	354,699	+84
Corporate Security Sales	214,132	149,897	+14.3	612,613	422,889	+44
Federal (non-federal work)	.....	.....	.....	.....	.....	.....
Federal (federal work)	.....	.....	.....	.....	.....	.....

MATERIAL SHIPMENTS & LABOR SUPPLY	February(F) January(J) 1949	1948	% Change	Two Months 1949	1948	% Change
Cement, thous. bbls., Bu. of Mines	8,756 (J)	9,205(J)	− 5.1	.....	.....	.....
Fabr. Struct. Steel, thous. tons, AISC	140 (F)	142(F)	− 1.5	291	283	+ 1
Lumber, mil. ft. bm., NLMA	2,100*(F)	2,623(F)	−19.9	4,295*	5,411	− 2
Lumber Prod., mil. ft. bn., NLMA	2,050*(F)	2,480(F)	−30.2	4,282*	5,199	− 1.8
Contract Const. Employ., thous., BLS	1,793 (F)	1,607(F)	+12	3,674	3,252	+13

† Computed on weekly average basis. * Estimate.

Contractor *triples number of jobs* with two BONANZAS for "expediters"

JOSEPH L. POHL, CONTRACTOR
Nevada, Mo. Phone 115

February 1, 1949

Mr. Walter H. Beech, President
Beech Aircraft Corporation
Wichita, Kansas

Dear Mr. Beech:

Our company has been in the construction business for over 25 years, doing road construction for the Missouri State Highway Department, levee building for the U. S. Engineers and airports for cities in conjunction with the C.A.A. Until a little over a year ago it was quite a problem to visit different jobs and supply them with emergency parts and equipment.

In 1947 we decided to purchase a Beechcraft Bonanza. It proved to be such an outstanding performer and so economical in operation that we now have a second Bonanza working for us.

Normally our company has constructed six to seven projects a year, but since purchasing Bonanzas and cutting travel time we constructed 22 projects in the past year.

We recommend the Bonanza highly as the best four-place plane on the market today.

Yours very truly,
Joseph L. Pohl
JOSEPH L. POHL, CONTRACTOR

Company ownership of the revolutionary 4-place Bonanza nets you two highly profitable advantages: You have complete freedom and mobility of action – and your travel-time is cut by two-thirds. So you (and your key men) get around more, can actually supervise more jobs in *less* time. The experience of the Joseph L. Pohl company is not at all unusual.

The Bonanza operates easily in and out of small, rough fields. And it doubles as an equipment carrier, eliminating costly job delays. Operating costs are measured in pennies per mile. Investigate!

● A note on your company letterhead will bring an informative 60-page brochure on "The Air Fleet of American Business." Write today to Beech Aircraft Corporation, Wichita, Kansas, U.S.A.

Top speed, 184 mph
Cruising speed, 170 mph
Range, 750 miles

BEECHCRAFT
BONANZA
MODEL A35

BEECHCRAFTS ARE THE AIR FLEET OF AMERICAN BUSINESS

Changing Cost Picture

THE IMPORTANT THING about construction costs is that they are no longer increasing. This is enough of a favorable factor without attempting to speculate on the extent or duration of any possible downward trend. The action of Congress last week in reducing by 15 percent all budget estimates made last Fall by the Army Engineers and the Bureau of Reclamation may readily lead to the latter kind of thinking—and some faulty conclusions.

Congress does not imply, as is widely reported, that it believes construction costs are going to drop 15 percent from the peak of last Autumn. It believes that the two government agencies will be able to get bids that are that much lower than it was estimated five months ago they would be able to get.

The estimates of last Fall no doubt included a considerable cost rise that did not occur. It may well be that, after the 15 percent reduction, the bids will not be out of line with actual costs at last Fall's peak. They will not include the inflation contingency items that were then deemed necessary, but beyond that they will not reflect a large drop in construction costs.

Support for this view is contained in the tread of the ENGINEERING NEWS-RECORD Cost Index in the same period. Last October it reached a peak of 480. Today, it stands at about 473, a drop of about 1½ percent. It has receded about a point a month for six successive months, a very healthy sign. But it would have to go down seven times that fast to record a 15 percent drop by the end of the year.

Government figures show that bids being received are from 5 to 10 percent below what the engineers thought they would be at the present time, not below what costs were at the peak. Costs have stopped going up, and they are pointing downward. Contractors thus no longer have to try to outguess inflationary forces, but they must still outguess one another. This will result in some reduction in costs, and it is a good thing for construction. But it will not bring costs down sharply.

Conservation Extremes

SWEEPING OBJECTIONS to any and all flood-control or irrigation dams that would flood any part of a national park are contained in the annual report of Newton B. Drury, director of the National Park Service. Mr. Drury adheres closely to the line followed by militant conservationists for many years—there must be no encroachment on lands set aside for forest or park service, regardless of any showing that the land to be flooded is worthless for park or forest use or even that flooding the land might improve its usefulness for park purposes, as for example at Lake Mead. On this premise, Mr. Drury objects to Bridge Canyon Dam on the Colorado, the Kaibab power project on the same stream, Glacier View Dam on the Flathead River and Green River Dam in Kentucky.

Similar objection was voiced recently to Panther Mountain Dam on the western slope of the Adirondack Mountains in New York. The unusual aspect of the latter protest is that the chief objectors to the dam—the owners of an exclusive hunting and fishing preserve—have found the militant conservationists very willing to carry the ball for them, although what the club owners fear most is that the reservoir formed by the dam will make the adjoining part of Adirondack Park more accessible to the public for recreational use.

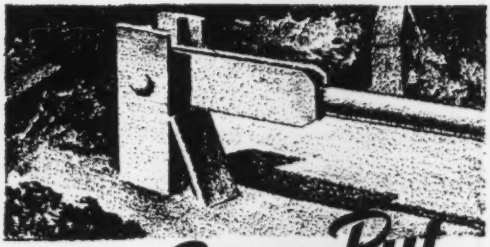
But whether public land or private land is involved the issue of flooding by reservoirs is not one to be decided on a special interest basis. Decision should rest on whether or not the public at large will benefit or lose by the change.

A Road Research Opportunity

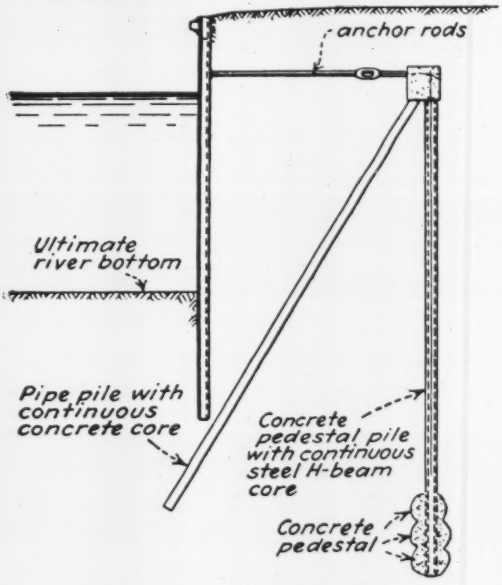
THE VIRGINIA Department of Highways has undertaken a state-wide survey of stone, sand and gravel deposits to provide information that should help to reduce roadbuilding costs. Samples are to be sent to the departments's testing laboratory for classification according to department specifications, after which the location of each deposit will be put on a master map for the information of both highway engineers and contractors. Known deposits will be recorded first, after which all sites where there are surface indications of unexploited deposits will be examined to determine whether useful materials are below the surface.

Similar studies have been made in at least three other states—Kansas, Wyoming and Montana—and have paid off in savings in time and in hauling costs. Additional savings appear possible through research into the potentialities of sands or gravels that in their natural state do not come up to state standards. If liberal samples are turned over to the testing laboratories for study it may well be found that unsatisfactory sands and gravels can be improved by screening or washing or both, and that substandard gravels can be brought up to standard by the addition of small amounts of imported materials. Also, many substandard materials can be made satisfactory for road building purposes through the addition of cement or bitumen. These possibilities open up many useful opportunities for laboratory research that should repay many times the cost of the laboratory studies.

WESTERN'S
A-FRAME ANCHORAGE



Makes Bulkheads Stay Put


anchor rods
Ultimate river bottom
Pipe pile with continuous concrete core
Concrete pedestal pile with continuous steel H-beam core
Concrete pedestal

Cross-Section of Bulkhead

Steel pipe driven as batter pile and filled with concrete forms the front or compression leg of the A-frame while a concrete bulb pile (Pedestal Pile*) with an H-beam core forms the tension leg. The two legs are connected by a pin to which the bulkhead anchor rod is attached.

WESTERN FOUNDATION CORPORATION has introduced a more effective type of bulkhead anchorage in the Cuyahoga River in Cleveland. Nearly 1,400 lineal ft. of steel sheet piling 48 to 60 ft. long and projecting 7 to 9 ft. above water level, were installed along the sides of the navigable channel.

IN THIS PROJECT, sliding ground and proximity of structures made the usual buried anchorage impractical. WESTERN's new anchorage consists of a rigid A-frame tie-back utilizing a vertical, tension-resisting Pedestal Pile* in combination with a batter pipe compression pile. In tests made under a jack lift pull of 160 tons, the Pedestal Pile showed a maximum elongation of only 0.3 ft.

DO YOU HAVE A FOUNDATION PROBLEM? Prompt consultation with a WESTERN engineer is provided in any part of the country. Write for Catalog A.

SEE OUR CATALOG IN

FOUNDATIONS FOR

INDUSTRIAL PLANTS, POWER PLANTS, STEEL PLANTS, PIERS AND DOCKS, WAREHOUSES, BRIDGES, AIRPORTS, HOUSING PROJECTS, SCHOOLS, COMMERCIAL BUILDINGS, ETC.

BUTTON BOTTOM PILES • COMPOSITE PILES • PEDESTAL PILES • CAISSON PILES • PROJECTILE PILES
COMPRESSED CONCRETE PILES • DRILLED-IN CAISSONS • PRE-DESIGN AND PRE-CONSTRUCTION
FOUNDATION TEST PROGRAMS • SOIL BORINGS • PIPE AND H-BEAM PILES

*Patented.

WESTERN FOUNDATION CORPORATION

308 W. Washington St., Chicago 6, Ill. • 2 Park Avenue, New York 16, N. Y.

ENGINEERING NEWS-RECORD

APRIL 7, 1949 VOL. 142 NO. 14

Bids fall below estimates as price decline continues

Federal agencies, local governments report general trend toward construction tenders under engineers' figures, with competition, productivity on rise

Bid prices for construction have definitely begun to under run engineers' estimates, for the first time in many years.

Probably the most important news in a decade for construction men, the trend downward has been shown only moderately by drops in recognized cost indexes. But it is brought into clear focus by action of Congressional committees in paring down budget estimates of construction agencies of the federal government (see below this issue, and ENR March 31, p. 23).

Basic factors in the drop are several: Increasing competition, general stability of materials prices that preclude the need for large contingency provisions, increasing labor market and labor productivity.

For the past six months, many contractors and contractors' organizations have forecast a downward trend in material and labor costs for the next two years. The break has apparently come well ahead of the forecasts—no longer are contractors adding into their bids a contingency allowance up to 20 percent or more for price rises during a job that may run two years.

Increased number of bidders

With the realization of a break in the price curve has come a sharpening of competition. The number of bidders offering tenders on individual construction jobs has increased.

Decline in bid prices (as compared to engineering estimates) has greatly outstripped the drop in indexes of construction costs. Indexes based on quoted market prices for materials and labor have so far shown only moderate recession. Thus the ENR construction cost index has decreased only 1.25 percent in the five months from October to March.

In the same period, bid prices have dipped much more than that below estimates. Best evidence of this trend appears in carefully tabulated bid records of the Army Engineers.

Last September, for example, low bids for buildings on engineer projects —residences to hospitals—ranged from 10 percent below government estimates to 72 percent above. During the first 22 days of March, no bids were above the government estimate —which allows nothing for profit; the low bids on buildings were 3 to 14 percent below the government figure.

Taking in the full scope of Army Engineer work—dams, levees, river and harbor improvements, buildings, power plants, equipment, and relocation of rail and road routes—56 bid openings in September showed an average of 4 bidders per job, with the low bids averaging 4 percent above the government estimate.

By comparison, 15 bid openings during the first 22 days of March produced an average of 6 bidders per job, and the low bids averaged 7.4 percent under the government estimate.

More spectacular—but probably less reliable—were the results for February. In that month, the low bids at 21 openings averaged 10.6 percent below the government estimates. An average of 6 bids was offered at each letting.

Analysis of Navy construction awards indicate the same trend. The Bureau of Yards and Docks lets fewer contracts than the Army Engineers, and its centralized records show award figures and award dates, rather than low bid prices and bid opening dates.

Navy awards for eleven construction contracts over $100,000 let in the three-month period of July-August-September 1948, averaged 27 percent

(*Continued on* p. 16)

House cuts Interior fund 15 percent

The House last week passed a fiscal 1950 Interior Department appropriation bill that grants all the authority and nearly all the money that the Administration requested. In the Senate, the bill is before the appropriations committee.

Senate hearings should start this week after the Senate committee has acted on Army civil functions and a couple of other measures. The Army appropriation bill passed the House just one day ahead of the Interior bill.

In voting the two money bills, the House supported the judgment of its appropriations committee by approving a flat 15 percent cut in budget requests for fiscal '50 construction funds. The committee's report on both bills stated plainly that the construction agencies should try to complete their year's work within the reduced funds allotted—but without any slowing down of the programs. If money should run out during the year for any construction project or program, the committee asked the agencies to come back with a request for a deficiency appropriation.

Aside from the cut in construction money, the House-passed Interior bill gives the Reclamation Bureau and the power agencies of the department practically everything the Administration requested. The measure lifts restrictions imposed by the 80th Congress on hiring personnel, building transmission lines, setting up a power marketing staff to sell energy from Army Engineer dams in the Southeast, and limiting force-account work to 8 percent of construction appropriation.

Contractors are perturbed by the complete elimination of any restriction on force-account work. The House committee, in reporting the Interior bill, said it had purposely omitted a limitation on day-labor work because that method is more economical in many instances. Further, it declared, ability of the Reclamation Bureau to resort to force-account work keeps contractors from excessive bids.

Interior Department appropriations recommended by the House-passed bill total $536-million—a reduction of $80-million below budget estimates. Most of the decrease comes from the 15 percent cut in construction funds of the Bureau of Reclamation. The bill sets up $296 million for the bureau's construction projects.

NEWS BRIEFS

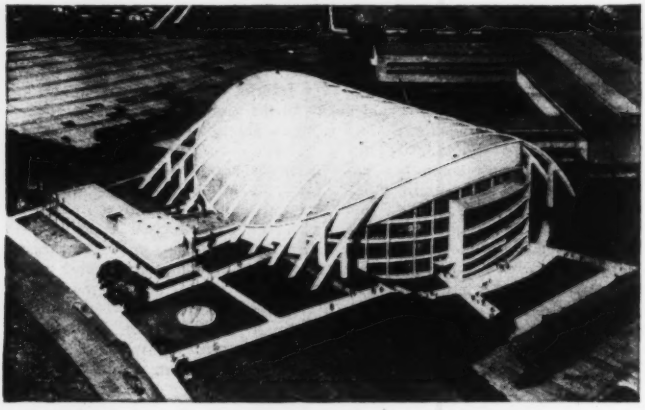
Dams—Federal, state and KING COUNTY funds would be used for construction of an $18,000,000 flood control dam on the Green River at EAGLE GORGE, WASH. Army Engineers have approved the dam . . . There is a move to have Congress approve an appropriation of about $23,341,000 for a Rappahannock River dam and hydroelectric plant near FREDERICKSBURG, VA. . . . Work on O'Sullivan Dam in the Columbia Basin irrigation project in eastern WASHINGTON is delayed because access roads are under 35 ft. of water. Heavy runoff into Moses lake, down the coulee, has created a lake 4 miles long and 60 ft. deep behind the dam although the reservoir is not scheduled to be filled until 1952 . . . Bids have been received by the Army Engineers for the construction at San Angelo Dam in TEXAS. Total construction at the dam site is estimated at $18,525,000.

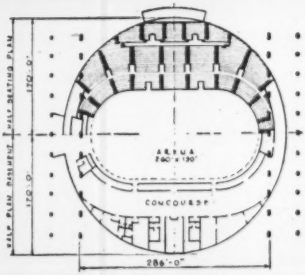
Public Construction—John McShain, Inc., Philadelphia, has been awarded the $21,635,500 general contract to build the new General Accounting Office Building at WASHINGTON, D. C. . . . It is expected that before April 15 the contract will be awarded for the new federal office building at NASHVILLE, TENN. . . . Razing has begun at SEATTLE, WASH., to clear the site for a $3,000,000 branch of the Federal Reserve Bank of San Francisco, Kuney Johnson Co. is contractor . . . Plans of U. S. Army Engineers at Kansas City for a $1,400,000 levee system in the lower NEMAHA RIVER VALLEY, NEB., will be submitted to Washington soon for approval . . . A multi-million dollar expansion program for the state docks at MOBILE, ALA., has been approved by the Docks Advisory Board . . . A $1,300,000 contract has been awarded to Gilley Bros., Ltd., NEW WESTMINSTER, B. C., for a 14,200-ft. extension to the south jetty in the Fraser River at STEVENSON, B. C. . . . Governor Chester Bowles of CONNECTICUT has recommended a $9,000,000 bond issue to finance construction of a $7,500,000 home to house 1,000 elderly people; $500,000 for the tubercular mentally ill; $500,000 unit to house criminally insane people, and $500,000 for facilities for mental cases in the state.

Sewers—ALBUQUERQUE, N. M., has awarded to Allison & Haney, a contract for a sewage disposal plant addition . . . Engineers are completing plans and specifications for a $3,200,000 sewer disposal system for the twin cities of BRISTOL, TENN.-VA. . . . City council of ROANOKE, VA., has adopted a resolution calling for the preparation of an ordinance ordering a bond issue election for a $4,000,000 sanitary sewer project . . . Sewage plant and sewer projects calling for a total of $1,650,000 in new construction have been approved by the INDIANA Stream Pollution Control Board . . . BOSTON, MASS., Metropolitan District Commission requires $25,000,000 in addition to $15,000,000 already authorized for the following sewage projects: Nut Island project, $1,015,000; North Metropolitan relief sewer, $3,600,000; Alewife Brook conduit, $800,000; Charles River conduits, $13,585,000, and the Deer Island Sewerage Works, $6,000,000.

Power—MacGregor Smith, president of Florida Power & Light Co. has announced that a new $10,000,000 electric power plant is to be built on the St. Johns River near GREEN COVE SPRINGS or PALATKA . . . Nantahala Power & Light Co. of Franklin, N. C., has plans to build eight dams and power projects in JACKSON, SWAIN and MACON counties, N. C., at a cost of over $20,000,000 . . . N. Y. STATE Electric & Gas Corp. plans to spend $52,800,000 on construction and expansion in the state during the next three years . . . Public Service Co. of Indiana, Inc. is pushing to completion its big generating plant at NOBLESVILLE to deliver ultimately 200,000 kw. It is costing $14,500,000.

Highways—The Esplanade Highway Bill, a part of the MASSACHUSETTS $100 million bond issue road program, as revised, has been OK'd in committee. Cost involved totals $8,000,000 . . . The $33,000,000 superhighway project for DUVAL COUNTY, FLA., dormant for a year, is being revived for discussion . . . Repeal of the 4-cent a gal. tax on gasoline has been proposed to the TEXAS legislature . . . By a vote of 25 to 24, the NORTH DAKOTA senate passed a house bill raising the state gas tax 2 cents a gal. . . . A bill is pending in the INDIANA legislature to increase the weight limit on heavy duty trucks from 18,000 to 24,000 lb. . . . WASHINGTON state legislature has approved a $107 million appropriation for highways during the next two years . . . In NEBRASKA load limits of motor vehicles have been restricted to a maximum of 10,000 lb. per axle.





LIVESTOCK THEATER—Construction began March 14 at Montgomery, Ala., on this unusual concrete structure to be known as the Alabama Live Stock Coliseum. Its novel appearance results from superimposing a 286-ft. span arch roof on a circular building of 340 ft. dia. The concrete design won out over an alternate steel design, on a low bid by the J. A. Jones Co., Charlotte, N. C. Architects and engineers for the project are Sherlock, Smith & Adams of Montgomery with Ammann & Whitney, consulting engineers of New York, as designers of the concrete arch roof and supporting structure.

BLS sees engineer shortage continuing

There's still a seller's market for highly-trained professional workers—but it's not going to last forever. That's the conclusion the Bureau of Labor Statistics has come to after exhaustive surveys of 288 skilled and technical occupations.

BLS found two major reasons why trained men are still in short supply—even today when unemployment among other types of workers is rising:

(1) Technological developments during and since the war have led to the creation of new industries and to a vast expansion in older ones. New personnel had to be recruited to conduct research, supervise production. The number of engineers employed, for example, increased from about 245,000 in 1940 to more than 300,000 in 1947—and this still was not enough.

(2) At the time war needs were expanding, however, the number of technical men being trained was reduced through withdrawal of college students by the draft.

Since the war's end, however, enrollment in technical schools and colleges has jumped sharply; in engineering schools, it is three times the prewar level. The first postwar graduates are already on the job. An increasing volume will enter industry with the end of the current and successive semesters (ENR Nov. 18, 1948, p. 5).

Thus, it now seems likely that some of the shortages of trained men will be eased in a matter of months; others will last only for another year or so; in two or three years, practically all the shortages will be over.

Civil engineer demand continues

Here's the outlook for some of the types of workers in especially short supply:

Civil engineers will be in great demand during the next several years because of the large supply of civilian and government construction deferred during the war years.

Some of this backlog has been, or is being, worked off, however. And enrollment in civil engineering courses is about double pre-war. So even if the general level of business activity remains high, there will probably be an ample supply of civil engineers to choose from in three years, at the outside.

Electrical engineers because of the expanding use of electricity in industry, transportation, in homes, on farms and in television, the demand for electrical engineers is increasing. But the supply is increasing even faster.

Mechanical engineers are already the largest single group of engineers. The field was swelled by a wartime influx of men without degrees. Now, with enrollment in mechanical engineering courses at a record level, the rapidly-expanding supply is beginning to balance slowly-increasing demand. Aeronautical specialists, recently graduated, are currently having trouble getting jobs.

Chemical engineers doubled in number since 1940, to about 30,000 in 1948. But demand is still rising fast because of the growth of the chemical industries, the increasing use of chemical engineers in other industries and expanding research and teaching needs.

Industrial engineers will still be in short supply for some two or three years. They are currently in great demand because of industry's need to speed up production, cut costs.

Architects are sure to be hard to come by for years to come, if building activity continues high. During and immediately after the war, output of the schools was less than pre-1940. Though enrollment is now high, volume of new graduates isn't nearly enough to catch up.

Draftsmen are in relatively greater supply now than during the war peak. There is a slight shortage of those trained in architecture and construction.

PERSPECTIVE . . .

A look at spring flood chances

Water supply forecasts to be released about the middle of this month will give a substantial basis for estimating the danger of serious floods this year in the Pacific Coast, Rocky Mountain and Great Plains areas. By that time the Weather Bureau, Geological Survey and Soil Conservation Service will have compiled and interpreted snow survey data to April 1.

Water content of the snow on the ground won't tell the whole story of flood possibilities. The snow pack is merely one element of the flood potential—though an important one. For floods of major proportions, heavy snow cover must be abetted by special weather conditions: a cold period—to retard melting—followed by a rainy thaw that turns snow to water simultaneously at both intermediate and high elevations. To become devastatingly severe at downstream points—on the main stems of great rivers—the flooded tributaries then must synchronize their peak discharges into the central artery.

On the basis of snow cover in the Columbia Basin March 1, a flood as great as last year's would be possible if all the accessory conditions lent their aid at the proper time. February precipitation was well above normal except in a few areas, in contrast to the light January fall.

In its water resources review of March 8, the Geological Survey predicted that heavy snow cover in the Columbia Basin will produce greater than normal runoff during the spring season but that a general major flood could not be predicted at that time.

On the other hand, the survey warned, if there should be cold wet weather from March 1 to May 15, with snow accumulating in all parts of the basin, followed by a period of warm, rainy conditions, a flood comparable to—or exceeding—that of 1948 might result.

For the Missouri basin, the Geological Survey early in March reported that the threat of widespread damaging floods had decreased somewhat during February. Snow cover—greatly above normal—had been depleted by evaporation and melting, and accretion to groundwater storage from snow melt had been tremendous.

All three agencies at the first of March reported less than normal snowpack for California. The Soil Conservation Service saw a good 1949 water outlook for the extreme north part of the state and for the North Central Sierra, but forecasts by the Weather Bureau of water-year flow for California streams were below normal.

Nearly all other states of the Pacific Coast and Rocky Mountain regions had excellent water prospects for the year. A potential hazard of extremely high stream flow existed in western Montana. February weather had reduced flood hazards in Utah. Accumulated snows presented potential flood dangers in several stream basins in Oregon.

Truman gives industry three years to diminish accident rate by half

President's Conference on Industrial Safety adopts "action now" program in fight against 2 million accident per year record

President Truman recently turned the spotlight of publicity on the nation's bad industrial accident record 2,000,000 injuries a year, many of them fatal. Opening the first full meeting of the President's Conference on Industrial Safety, he called on his 1,200 hearers to halve the accident rate in three years—bring it down to 1,000,000 cases per annum.

Training a searchlight on accident hazards was no new trick for the President. He used the same device three years ago when he called together the President's Conference on Highway Safety. That organization has proved effective in stimulating a nation-wide campaign by states and localities to remedy the causes of street and highway mishaps. Mr. Truman now aims to do as much for workmen on the job.

By vigorous attack on its problems, the Industrial Safety Conference gave evidence that it would produce results. Industrial managers, labor leaders, government officials and safety organization executives participated actively in the three days of Washington sessions. They dissected and amended the 2 lb. of reports submitted to the conference by its seven technical committees—plus a 10-page summary put together at the finish by the coordinating committee.

Call to action

At the end of the three-day meeting, the delegates adopted an "action now" program calling for (1) state conferences on industrial safety and (2) continuation of the President's conference as "a national organization of cooperating agencies, public and private, dedicated to the prevention of job injuries." In both respects, the conference followed tested precedents of the highway safety program.

On the first day of its meeting, the conference received some mildly encouraging news. The Bureau of Labor Statistics reported that disabling work injuries during 1948 fell considerably below 2,000,000 for the first time in the last three years. Workmen's injuries for the year were estimated at 1,960,000, almost 5 percent below the 1947 total of 2,059,000. Fatalities, at 16,500, were down 3 percent from 17,000 the previous year. The improvement was made in the face of a much greater employment in almost every industry group.

For construction, the record was not so encouraging. With 173,100 work injuries estimated for 1948, construction was the only industry group to show a major increase for the year. The rise resulted partly from an increase in the injury rate and partly from a considerable expansion of employment.

Construction men attend

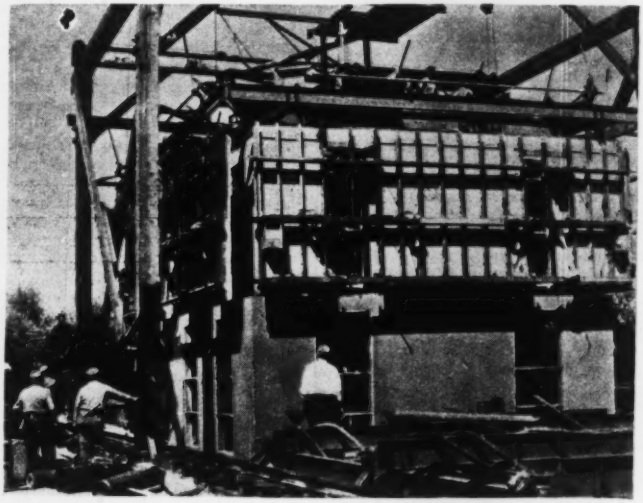
Construction men took leading parts in the meetings. Vincent P. Ahearn, executive secretary of the National Sand & Gravel Association, is executive director of the conference. The assistant executive director is Lloyd A. Blanchard, formerly in charge of the safety program of the Corps of Engineers and now assistant to the general chairman of the federal safety council. On the conference engineering committee, Gerard O. Griffin, director of safety for the Dravo Corp., heads the subcommittee on design of plant and structures.

Seven months' work by several hundred people laid the groundwork for the conference. At a preliminary meeting in Washington last September, 500 selected conference members—organized in committees and subcommittees—received their assignments for studies and reports.

Major technical committees, for example, were appointed at that time to investigate and make recommendations in seven fields: (1) Accident records, analysis and use; (2) engineering; (3) laws and regulations; (4) education; (5) labor-management cooperation for safety; (6) programs and services; and (7) research.

High cost of accidents

Summarizing the conference reports, the coordinating committee stated that job accidents cost employers and workers $4.5 billion a year. Some 70 percent of the accidents occur in the plants and on the jobs of the country's 2,500,000 small firms, though these firms employ much less than that proportion of the work force. The mission of the President's Industrial Safety Conference is to reach every job site in America, the committee declared.



MACHINE-MADE HOUSES—Cranes will set a one-piece wall form on a concrete floor slab with roadbuilding equipment for a low-rent housing project planned for Norfolk, Va. After the 8-in. concrete wall hardens, an adjacent portion of the slab will be raised by a vacuum-lifting mechanism and set on top to form the roof. In this manner, a semi-detached house will be cast, having two 24 x 28-ft., 2-bedroom units. Ibec Housing Corp., an affiliate of the International Basic Economy Corp., will build 204 units in cooperation with Henry Clay Hofheimer II. Estimated selling price is $5,500.

On the premise that elimination of physical hazards is the first step of an effective safety program, the committees recommended (1) that engineering control of hazards start at the drawing board stage of building design and continue through construction and process layout; (2) that machine safeguarding begin at the design stage; (3) that adequate inspection and job analysis be utilized to improve safety of layout and work methods; (4) that human physical limitations be given sufficient weight in design considerations; (5) that environmental influences be evaluated and controls established for factors such as noise, vibration, temperature, atmospheric contaminants and illumination; (6) that development of American safety standards be continued and that accident control programs be based on accepted engineering criteria.

Safety legislation

On the part of government, responsibility for effective accident prevention rests with the states. The conference accepted committee recommendations that each state (1) enact a basic safety law authorizing its labor department to promulgate codes, (2) appropriate funds for an adequate inspection and enforcement staff that can also give advisory service to management and labor, and (3) collect and analyze accident data.

The recommendation that state labor departments write and revise safety codes brought up the old argument as to the wisdom of delegating this authority. Governor John O. Pastore of Rhode Island, guest speaker at the conference, answered some of the objections. As the result of a state law creating a permanent code-making body—supplemented by sufficient well-trained personnel and abetted by sincere cooperation of management and labor—Rhode Island in four years has reduced its accident rate by 36 percent; compensation insurance premiums recently decreased 8½ percent.

In the way of federal help, the conference asked for (1) more detailed information from the Bureau of Labor Statistics on work injuries—their causes, costs and consequences, and (2) continued assistance and advice—whenever requested—from the Bureau of Labor Standards to the states, management, labor and private safety organizations.

At the conclusion of the three-day meeting, the conference appointed a committee on reports to compile the official version of its seven major documents. The committee was authorized to consider all amendments and reconcile any differences in putting together the final draft—to be released within a month.

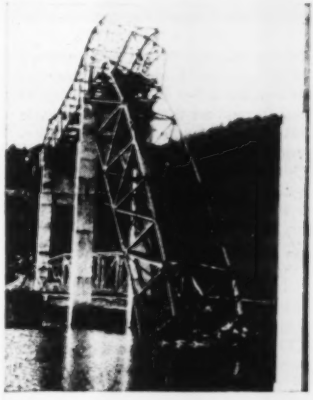
Bridge span drops during erection

A sudden collapse of the center span of the new Bluestone River cantilever-type highway bridge near Hinton, W. Va., March 31, plunged five men to their death in the stream 150 ft. below. Four others were injured.

Nine of the twelve panels of the 278-ft. span had been cantilevered from a 230-ft. anchor span when the collapse occurred. Neither officials of the Virginia Bridge Co., the contractor, nor engineers of the West Virginia State Road Commission have advanced an opinion as to the cause of the collapse. The 200 ft. collapsed section of the main span came to rest in an inclined position as shown in the accompanying photograph. The top chord is broken over the pier.

Two spans of the structure starting from the south side of the river had already been erected, one a 208 ft. approach span and the second the 230 ft. anchored arm. Two similar spans remained to be erected at the north end.

The bridge, the highest in West Virginia, is part of the relocation of State Route 20 necessitated by the construction of Bluestone Dam, an Army Engineer project. Contract for the superstructure was awarded the Virginia Bridge Co. Nov. 18, 1947 for $460,034. Work commenced Nov. 4, 1948, and completion had been expected by Oct. 1, 1949. The substructure was completed Sept. 24, 1947 by the Dravo Corp., Pittsburgh.



Final contracts end fight over diffusers in Chicago

Award of contracts for 38,400 porous plates by the Sanitary District of Chicago recently put an end to a prolonged struggle over the type of diffuser to be specified for the Southwest Sewage Treatment Works. The award also dispelled the last hope of the Chicago Pump Co. to have its swing diffuser used.

When bids were to be opened last Dec. 16 for construction of piping necessary to the diffuser system, a taxpayer suit was filed seeking an injunction against bid opening and demanding that the district prepare specifications permitting use of the Chicago Pump diffuser. Bids were impounded, unopened, pending a Jan. 5 hearing. At that hearing the presiding judge found no basis for the suit, and the district then rescheduled opening of the impounded bids for Jan. 13.

James H. McCauley & Sons, Inc., Chicago, was awarded a $529,600 contract for the installation of eight aeration tanks—each 136 ft. by 434 ft. and complete except for diffuser plates, which were supplied by The Carborundum Co. and The Norton Co. in these recent, final contracts.

Throughout the court action (Superior Court, Cook County) the Sanitary District of Chicago maintained that design had been based on extensive tests which showed the porous plate diffuser system more economical.

Brig. Gen. S. D. Sturgis, Jr. to head Mo. River Division

Maj. Gen. Lewis A. Pick, Chief of Army Engineers, has named Brig. Gen. Samuel D. Sturgis, Jr., to be division engineer of the Missouri River Division with headquarters in Omaha.

General Sturgis will succeed General Pick in that capacity, and to him falls the task of direct supervision of the Army Engineers' share in carrying on the Pick-Sloan Plan, which his predecessor co-authored.

General Sturgis, described as a veteran of "high water fighting" and flood control construction both on the Ohio and Lower Mississippi rivers, will go to Omaha about May 15. Meanwhile Col. Louis Prentiss, district engineer, will continue as acting division engineer.

General Sturgis is a West Pointer, appointed from North Dakota. In World War II he was chief engineer of the Sixth Army.

Approval appears likely for Science Foundation

Congress has national research bill that President should approve

The government finally is going to set up a National Science Foundation. Congress is willing to take the kind of law that President Truman likes. And if present plans aren't altered, Congress will vote $2,000,000 to start the program.

The idea of a National Science Foundation is to have the federal government distribute grants-in-aid to universities and institutions and scholarships to students to finance fundamental research.

Results of research done under the foundation program would be protected by specific patent regulations superimposed on the general patent laws. The bill Congress drafted has this provision:

"Each contract shall contain provisions governing the disposition of inventions produced thereunder in a manner calculated to protect the public interest and the equities of the individual or organization with which the contract or other arrangement (scholarship or grant-in-aid) is executed."

Vetoed once before

The legislation this year is drafted to meet the objections President Truman registered against similar legislation two years ago. He vetoed the bill then because he was restricted in his freedom to name the administrator of the program, and because the advisory board of scientists proposed to be created would have had almost autonomous authority over the program.

This time, the top organization is to be headed by a $15,000-a-year director appointed by the President to be the executive officer of the foundation. A 24-member board of scientists —from basic sciences, medicine, engineering, education or public affairs— would meet from time to time as advisors to the director. An executive committee of the 24-member board would have jurisdiction over the various fields of the program.

The law would transfer from the Labor Department to the foundation the national roster of scientific and specialized personnel. Additionally it would provide a central clearing house for all scientific and technical personnel information and foster interchange of scientific information with foreign countries.

It probably will be a year—say July 1950—before the program is fully underway.

JOINT VENTURE—U. S. Steel Corp. of Delaware and Mellon National Bank and Trust Co. will build this 35-story structure in Pittsburgh. Turner Construction Co. of New York is the contractor; Harrison Abramovitz of New York and Cocken of Pittsburgh are associated architects. Cost is estimated at $12,000,000.

Bids are seen dropping below engineers' estimates

(*Continued from p. 11*)

higher than the government estimates. Figures are available for the number of bidders on nine of these jobs; the average was five bidders per opening.

Contract awards by the Bureau of Yards and Docks in the later four-month period—November through February—averaged 19 percent higher than the estimates for 13 projects over $100,000, including two top-heavy awards that exceeded the estimates by more than 90 percent. Eliminating these two extraneous variants—one of them 95 percent higher than the estimate and the other 113 percent higher —the average for the remaining eleven jobs was just 3 percent above the government's estimated cost figure.

Corroborative evidence comes from the Bureau of Reclamation. Though not so specific as the data from the Army Engineers and the Navy Bureau of Yards and Docks, the Reclamation testimony points to the same trend. Chief Engineer Leslie N. McClellan on March 25 made these general observations:

"There has been an increase in the number of bidders on some of the work recently advertised, which has resulted in a few instances in somewhat lower bids than would otherwise have been expected. Also there appears to be a tendency toward a smaller spread between the low and high bidders, indicating that contractors are figuring their work more closely. Unit bid prices for excavation items have shown a slight down trend, possibly due to heavy earth moving machinery being more readily obtainable. Prices bid on concrete remain at a high level. In some locations labor supply is better and productivity higher resulting in lower overall labor costs.

"Wholesale price quotations of building materials, with the exception of lower grades of lumber, have been holding firm. However, with a better supply, premiums and extras which are loaded on to many materials are disappearing and should result in better prices."

Survey indicates trend

The reports of lowered bids submitted to federal agencies is strongly supported by a survey of local conditions, conducted last week by the ENGINEERING NEWS-RECORD correspondent network.

A random sampling of these latter reports, showed:

Costs for sewer work in Milwaukee have decreased five to 10 percent below last year—a fact local contractors attribute to increasing competition among builders and a slowing down of the tempo of work. Out of 13 sewer bids received between Feb. 21 and March 25, nine are from four to 15 percent below estimates; all bids recently received for water main work are also below estimates.

New York State—where highway engineers have been so strict in their measures to hold down prices that only 61.3 percent of the jobs offered attracted bidders in 1948—is getting bidders on over 85 percent of its jobs in 1949. And from three to 6.8 percent of the low bids were below estimates.

A watermain contract in Oklahoma City, let March 16, went for 27 percent below water department estimates. San Antonio, Texas, let a contract for a relief sanitary sewer that was seven percent below the estimated $216,000 cost, and China, Texas, got a bid 20 percent below estimate on a seven-inch concrete street paving project.

On the Pacific coast, the city of Seattle opened new bids for street paving, (the original bids were rejected last July because the lowest was $32,000 over estimates) and found it had received a bid within $10,000 of the original estimate.

Truman asks 'Quoddy tidal study funds

The Passamaquoddy tidal power project is before Congress again. Funds for a preliminary study of the project—a favorite of the late President Roosevelt in early New Deal days—are included in a new deficiency appropriation bill now being considered by the House (ENR March 31, p. 19).

This study—actually an investigation of the economics of a more thorough-going review—is to be made by the International Joint Commission. President Truman has asked Congress for $30,000 as the U. S. share of IJC's survey. Canada will put up the remainder required for the preliminary study.

IJC has named E. Robert De Luccia, chief of the Federal Power Commission's bureau of power, and Maj. Gen. R. C. Crawford of the Corps of Engineers as the American members of its four-man investigating staff. They first met with the Canadian investigators this week to organize their study. President Truman has estimated the investigation will require about six months.

Interest in Passamaquoddy revived last year, when Maine's congressional delegation began petitioning the White House to look into the area's power supply situation. Sen. Margaret Chase Smith has been a leading proponent for a new 'Quoddy investigation.

But Canada, stirred by the discovery of mineral deposits in her maritime provinces, also has become interested. The two nations requested IJC, which has treaty jurisdiction over their boundary waters, to look into the matter. Since a detailed investigation would cost several millions, it was decided that IJC should first pass on the economics of a new tidal project, recommend an allocation of the costs of engineering studies between the two countries, and review all existing project plans.

Project has long history

The 'Quoddy project dates back to the early '20's, when Dexter P. Cooper, Inc., asked FPC for a federal license to develop the tidal fall of Cobscook Bay, an arm of Passamaquoddy Bay. In 1926, Cooper made an investigation, financed by General Electric, Westinghouse and the Aluminum Company of America. ALCOA was interested because of reports that clays in the area were rich in bauxite. But all three companies subsequently lost interest.

Cooper, however, carried the project to the Public Works Administration, which he petitioned to finance construction of his project. This request was rejected in 1934 when both FPC and PWA reported adversely on Cooper's plans. Both agencies shied at the estimates of cost, which ranged as high as $1,000 per kwh. of effective energy produced. They also found there was no market for the power at that time.

But at the request of President Roosevelt, a 'Quoddy development was authorized by Congress in the Emergency Relief Appropriation Act of May, 1935. The Army engineers received $10,000,000 (later reduced to $7,000,000) to start work.

The Engineers built a construction village, a causeway and other minor works, then abandoned the project when Congress refused to appropriate further funds. Two plans were considered by the engineers. One would have provided two tidal pools and generating facilities capable of producing an estimated annual output of 487,000,000 kwh. This development would have cost nearly $90,000,000, FPC later estimated. The Engineers actually started a one-pool project which was to have an initial power installation of 62,500 kw. Some sort of standby plant, probably a steam station, would have been built to meet the energy demand during the several hours daily when the tidal plant could not operate (ENR Apr. 23, 1936, p. 583).

This work was all confined to bays wholly within the state of Maine. If Canada joins in the undertaking, the great area of Passamaquoddy Bay could be used, which would improve the feasibility of the project, but the cost would be much higher.

Still a barrier to any development which may be proposed, however, is the 1941 FPC report, which questioned the validity of then existing cost estimates for power production. "Undeveloped water power sites on the rivers of Maine provide the most economical source" of large new blocs of energy in the area, the report concluded.

Canada OK's Strait of Canso bridge

Construction of a $13,500,000, low-level bridge over the Strait of Canso, which separates Cape Breton Island from the mainland of Nova Scotia, was assured recently by the Canadian Government.

A decision to finance the long-awaited structure follows receipt by the government of a report by a three-man board of engineers which has been studying the problem of the crossing of the strait for the last year. The board consisted of D. S. Ellis, dean of Queen's University, Kingston, Ont. (chairman), P. L. Pratley and A. Surveyer, both consulting engineers of Montreal. This decision marks the end of over fifty years of almost steady agitation for the construction of the bridge by local interests.

Importance of Cape Breton Island to the dominion lies in the fact that on its northern coast is Sydney and all the extensive coal mines associated with it, plus large steel works of the Dominion Steel and Coal Co.

All rail communication linking this vital industrial center with the rest of Canada is now dependent upon train ferry service across the Strait of Canso, operated by Canadian National Railways. This ferry is not a paying proposition and is a source of delay imposing severe limitations on transportation to and from the island.

The board advised against tunnel, causeway and high-level crossings, suggesting a 3,000-ft. low-level bridge as the best solution. It will include provision for highway and railway traffic, thus replacing not only the train ferry system but also an automobile ferry operated by the provincial government of Nova Scotia.

It has not yet been agreed how the

cost of the bridge will be allocated between the federal and the provincial governments. Many technical problems must be met, not the least of which are those associated with the strong tidal currents in the Strait. Depths of water over 200 ft. will be encountered in connection with foundation construction.

Packing plant builds disposal system

A trickling-filter disposal plant, recently installed in an attempt to end stream pollution from a small Missouri meat packing plant, is believed by engineers to provide a solution for many similar small industrial establishments.

The filter was installed at Raytown, a suburb of Kansas City, Mo., at the plant of the Reitz Meat Products Co. Previously, sewage and drainage from several small septic tanks were discharged into a small creek branch which normally has almost no flow. Besides sludge banks, gasification and other characteristics normal to a small stream carrying heavy pollution, the stream was often a bright red owing to washings from the dyeing of sausage skins.

Designed to fit need

To eliminate this situation, engineers designed a waste treatment plan for a normal kill of 36 cattle or 120 hogs per day, with an estimated sewage flow of 40,000 gpd. Of trickling filter type, the plant has primary and secondary settling, two-stage filtration and 2:1 recirculation in each stage.

Principal plant units are a combined clarifier and digester, the trickling filter, a pump station and sludge drying beds. The clarifier has a cross-diaphragm separating primary and secondary flows. Bottom plows pass under the diaprhagm, and the skimmer over the top.

Solids are scraped to the center and passed by gravity through a trap to the digester compartment below; skimmings are collected in a conventional trough and discharged either to a manhole alongside or to a container outside the tank.

This clarifier has a total volume of 46,200 gal., and the retention period, at 2:1 recirculation ratio, is about 1.5 hr. Two-thirds of the overflow, which is recirculated, is withdrawn over a central launder while one-third passes over a peripheral weir to the succeeding stage.

The digester has a volume of 5,550 cu.ft. and is equipped with bottom plows and scum breakers. Sludge is withdrawn from the bottom at the center. Circular coils are provided around the walls for heating.

Supernatant from the digester is drawn by gravity to a manhole and pumped to the primary clarifier.

The dual-type trickling filter—designed for a maximum loading of 1.33 lb. BOD per cu.yd. of media—has a center portion that serves as a primary filter and an outer portion that is the secondary filter. Sewage is fed through a rotary distributor—two arms discharging primary sewage to the center portion and two discharging secondary sewage to the outer ring.

Filter media in a five-ft. bed is crushed limestone of a size passing a 4-in. screen and retained on a 2½ in. screen. Filter walls and floor are of reinforced concrete.

Plans for the sewage treatment plant were prepared by the Burns and McDonnell Engineering Co., Kansas City. Major items of equipment were furnished by the Dorr Co., and construction and installation was done by the Rau Construction Co.

Ohio drops regional road design offices

The Ohio Department of Highways is now putting into effect five sweeping changes in its organization, among them the complete reorganization of its design offices.

Theodore J. Kauer, director of the department, said that the four existing regional design offices will be abolished and the personnel transferred to Columbus into the Bureau of Location and Design.

Other changes in the department will include the employment of 160 new engineers to serve the Bureaus of Construction and Design; development of a salary spread to end the present inequitable practice of paying some subordinate employees more than their superiors and to give key personnel increased take-home pay; creation of a new Bureau of Planning and Programming; and the use of $5,330,000 of general revenue funds as the foundation of a $21,000,000 urban-state-federal program to relieve congestion in larger communities.

Commenting on the changes in the design offices, Mr. Kauer said that for some years there have been jurisdictional misunderstandings and confusion among the regional design engineers and the division engineers.

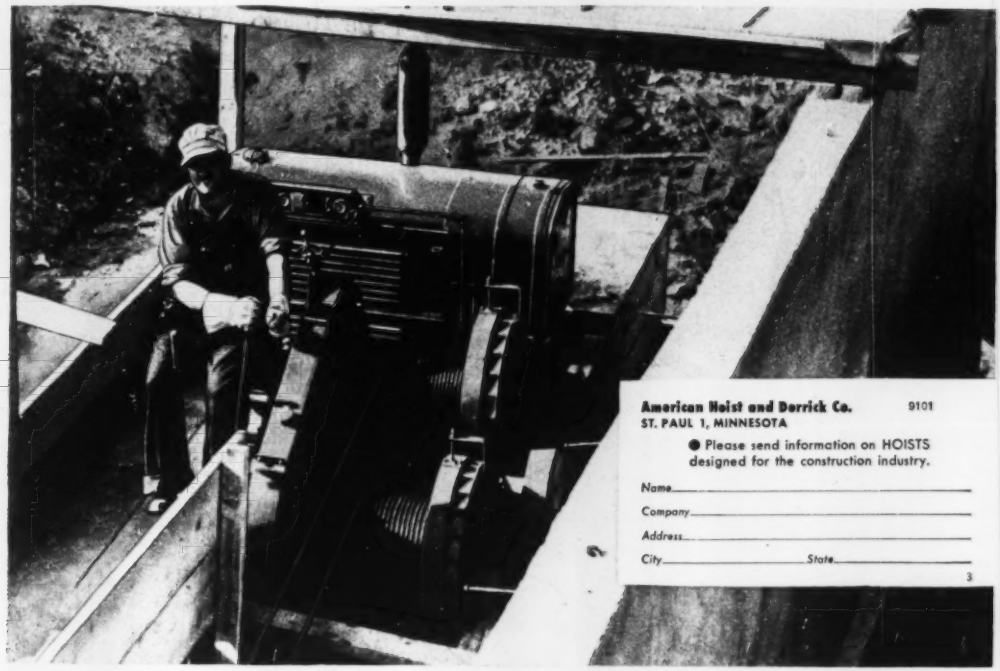
Regarding the employment of the new engineers, Mr. Kauer pointed to a "terrible shortage" of trained technical personnel as the reason for the large recruiting program.

Increase in gas tax proposed in Missouri

An increase of two cents in the state tax on gasoline has been recommended to the Missouri Legislature by Governor Forrest Smith to provide additional funds for rural roads and for traffic relief in the cities. The increase would bring the state gasoline tax to four cents. This brings to 17 the total number of states to consider gas tax raises this year (ENR Mar. 10, p. 15).

The governor's action was taken on the recommendation of the Highway Advisory Committee, headed by former Governor Lloyd C. Stark. The committee recommended that 15,000 miles of rural roads be incorporated in the state system during the next four years as supplementary state highways and that these roads be reconstructed to proper standard during the next ten years.

The commission estimates that $25,600,000 will be required annually for the next ten years to bring the 8,350-mile primary system up to acceptable standards, or a total of $256,000,000. An additional $75,000,000 will be needed for highway work in and around cities. Since the 4-cent tax is expected to provide a construction fund of $443,811,000 after deducting maintenance charges, bond interest and redemption, there will be available about $113,000,000 for work on the 15,000 miles of roads that have been recently added to the state system.



American Hoist and Derrick Co. 9101
ST. PAUL 1, MINNESOTA

● Please send information on HOISTS designed for the construction industry.

Name_____

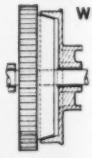
Company_____

Address_____

City_____ State_____

3

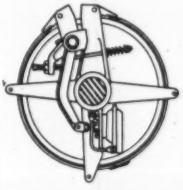
The hoist that delivers in the clutch



WHAT CONSTRUCTION MEN SHOULD KNOW ABOUT CLUTCHES

CONE TYPE clutches, operated by lateral pressure, create side thrust on frame of the hoist. Must be held under pressure when engaged, and need spring release mechanism. Adjustment and maintenance relatively difficult. Heat is created internally, and is not readily dissipated.

CONTRACTING BAND clutches on AMERICAN hoists are engaged by external band action. Clutch is self-energizing. One set screw, easily reached, gives instant adjustment. All parts needing maintenance are accessible. Bands reversible for extra wear. Fins quickly dissipate created heat.



When the chips are down, and you have to call on men and machines for "impossible" performance . . . it's a pleasure to own an AMERICAN hoist. In that kind of a situation, you'll notice some amazing differences in the way a hoist can behave. First—you'll notice extra production without a sign of strain. Second—an effortless, precise operation that keeps the operator fresh and rested. Third—your AMERICAN hoist stays cool and quiet while another may be smoking hot, noisy and seeming to labor in every part.

The reasons? There are many . . . but important as any is the AMERICAN hoist *friction clutch*. It's an external, contracting band mechanism. Wonderfully smooth, instantly responsive . . . and always tuned to "concert pitch", because repair and maintenance are simple, quick and easy.

Want to find out how such a hoist fits *your* business? Mail coupon today, for literature telling the story.

American Hoist
and DERRICK COMPANY
St. Paul 1, Minnesota

Plant No. 2: So. Kearny, N.J. • *Sales Offices:* NEW YORK, PITTSBURGH, CHICAGO

THE WIDE LINE OF AMERICAN HOISTS OFFERS THE RIGHT SIZE, THE RIGHT TYPE, THE RIGHT POWER, FOR ANY JOB

Utility Hoist
500 lbs. S.L.P.

Single Drum Hoist
2,500 lbs. S.L.P.

Double Drum Hoist
7,500 lbs. S.L.P.

Three Drum Hoist
10,000 lbs. S.L.P.

Four Drum Steam Hoist
25,000 lbs. S.L.P.

Three Drum Hoist
40,000 lbs. S.L.P.

Reduced Treatment Costs

Less load at the disposal plant—and, therefore, a reduction in sewage treatment costs—is one of the practical advantages that often result from the use of Transite* Sewer Pipe.

There are two good reasons for this:

(1) Transite's special sleeve-type joints that cut sewer line infiltration to a minimum.

(2) Transite's long 13-foot lengths that reduce the number of joints in the line—an additional safeguard against infiltration.

Besides the immediate saving in treatment costs, this reduction in load also enables plant capacity to be conserved for future needs. And, where new treatment facilities are planned, it permits consideration of a smaller plant . . . with possible important economies in disposal equipment.

Other Transite Economies . . . Transite has an exceptionally smooth interior that reduces resistance to flow. This, combined with its long lengths that help maintain uniform grades, plus fewer joints that reduce turbulence, often permits designing the system with flatter grades and shallower trenches. Or, as an alternate economy, pipe of smaller diameter may be specified.

Transite Sewer Pipe is made of asbestos, cement and silica by a special method of manufacture which develops high, uniform strength and resistance to corrosion. It is available in four strength classes in sizes to 36". This permits selection of the pipe best suited to trench conditions, frequently eliminates the need for concrete cradles.

For further details, write Johns-Manville, Box 290, New York 16, N. Y.

*Transite is a Johns-Manville registered trade mark

.....Johns-Manville

TRANSITE SEWER PIPE...

DEVELOPMENTS ABROAD

STEEL WALL FORMS used by a South African contractor may be removed the day after a no-fines concrete is poured.

Union of South Africa—Mass production of poured concrete housing units has been made possible by use of patented steel wall forms invented by Roy W. Rumble, a South African contractor.

Rumble's success in assembly line building, or quick erection of individual units, is due to a steel form fabricated in his own shop. Largest unit is a panel 6 ft. by 3 ft., and a great variety of smaller sizes provides complete flexibility. Form panels are fabricated of light-gage steel and are held in place by ties inside the wall. Steel door bucks and window frames are placed in position in the form work before concrete is poured.

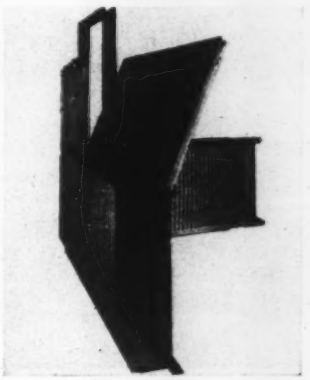
Construction by this method is not confined to solid walls. Cavity construction is also possible as has been proven in the use of insulating materials for the inner wall.

Concrete used in the Rumble method is a no-fines mixture consisting of ¾ in. stone aggregate mixed in a 9 to 1 ratio with cement. A half-inch plaster coat is applied to both sides of the wall in a 6 to 1 mix.

As a rule, floors have been concrete slabs varying from 3 to 4 in. in thickness. Roofs are either of timber covered with corrugated steel, or tiles, shingles, or slates, as required. In the case of the heavier roofing materials, concrete rafters and concrete roof slabs have been successfully used. These are cast in place.

Many advantages are claimed for houses built of the no-fines concrete mentioned above. There is virtually no capillary action, and when plastered the wall is highly resistant to moisture penetration. Experience has shown that no condensation occurs on the inside face of walls, maintenance costs are low, vermin infection is reduced to a minimum, and sufficient strength has been developed for use of this mixture in three-story buildings.

Rumble's steel forms are adaptable to pouring of columns, beams and even curved surfaces. It has been found that skilled labor needs a training period of only two or three hours. Unskilled labor, used extensively in the erection, has been taught to use the formwork in about four hours. Rumble is equipped to build 1,000 houses a year, but thus far materials shortages have limited his activities to about 30 percent of this figure.



RUMBLE'S FORMS are patented and made in his own shop in a variety of sizes and shapes. This view shows door buck set in well forms.

Spain—An international competition for the best suggested method of house production has been announced by the Instituto Tecnico de la Construccion. The competition has been organized for the purpose of encouraging interest in the problem of overcoming a housing shortage due to population increase in Spain and population shifts from rural to urban areas.

House construction has reached prices beyond the means of most families, and the solution is believed to be found only in introduction of mass production methods in the housing industry. It is realized that new machinery and new materials will be needed, but the pressing need for 50,000 dwellings per year has prompted the initiation of this international construction competition.

Instituto Tecnico de la Construccion is an organization within the Higher Scientific Research Council (a national corporation responsible for the coordination and development of all branches of research). Primary objective of the institute is to assist engineering and architectural advancement by disseminating construction information.

Thinking both in terms of traditional building methods and also of the possibilities of an entirely new technique, the institute has set forth conditions of the competition which is open to any persons, national or foreign, interested in entering.

Competitors may obtain all necessary information by applying before July 1 to the institute at Ruiz de Alarcon, 25 Madrid. Projects entered in the competition must be sent to the same address before Nov. 15 of this year.

Financing

Mexico—The Export-Import Bank recently announced a credit of $1,519,000 to Nacional Financiera, S. A., a financial agency of the Mexican government, to assist purchases in the United States for a water treatment plant. The plant is part of a project to expand and improve the water supply and distribution systems for Tampico and the adjoining city of Ciudad Madero. Credit was extended under a $50,000,000 commitment made to Mexico on April 30, 1947.

A contract for the delivery and installation of the equipment for the water treatment plant has been

awarded to the Permutit Co. of New York City. The remainder of the project will be undertaken by the Ministry of Hydraulic Resources of the Mexican Government.

Highways

Argentina—The Federal Highway Department has announced that it will spend in the neighborhood of $60,000,000 on road work during 1949.

Argentina now has paved roads stretching from the eastern to the western boundaries of the country, and is steadily extending the paved highways to the north and south.

One important road project to be completed is the paving of a second section of the expressway between Buenos Aires and the coastal resort city of Mar del Plata which carries probably the heaviest traffic in all of South America. At present only one lane between the two cities is paved, and two-way traffic uses it.

PERFORATED STEEL FORMS have been introduced by German house builder Fritz Leonhardt at Weinhein, near Heidelberg. In addition to this weight-saving device he also is innovator of a concrete mix of cement and ground rubble, of which he is building these houses. (Wide World Photo).

Power Projects

Italy—Power needs in this country have recently been officially estimated at some 13 billion kwh. annually. It is planned that this need will be met by 1957, when hydro-electric plants now under construction or planned will be in operation. The entire eight-year program will cost nearly $1 billion.

Among the works now going forward are two steam plants—at Lardarello in Tuscany. These plants were almost completely wrecked in 1944, but they are now entirely rebuilt. Their present potential exceeds 150,000 kw.

Plans to harness the Tiber River have been presented in answer to the serious power shortage. It is estimated that a series of power stations along the river could produce 650 million kwh. annually while providing irrigation for 100,000 acres of land.

Water from three lakes and three rivers to the north of Rome would be utilized in this project which would involve construction of seven dams and cost an estimated $100 million.

India—This country's power engineers met in New Delhi recently to coordinate plans for doubling the country's existing power production in ten years. The estimated cost of the generating and distributing facilities will be about $900 million.

New hydroelectric projects now in various stages of planning or execution in the provinces will add generating capacity of about 3,000,000 kw. When these plants are completed India probably will rank third among the world's electric power producers—the other two being the United States and the U.S.S.R. India's total installed capacity today is about 2,200,000 kw.

Work has begun on the construction of the $63,000,000 Yamuna hydroelectric project in the United Provinces. The development is to be in two stages. The first calls for a 2,048-ft long dam across the Yamuna to divert water into an 8-mile concrete-lined canal. The second stage will comprise a 70-ft. high dam on the river Tons and a 7-mile concrete-lined tunnel in two sections to be driven through intervening hills forming a double loop in the river.

The entire project, with a total head of nearly 750 ft. in the two rivers, will generate 89,600 kw.

NEW BRIDGE MOVED IN—A double-track, 165-ton railroad bridge was built alongside the existing structure in northwest London, England, then was rolled into place between trains on a recent Sunday. The original 80-year old structure had been stripped for speedy replacement and minimum traffic delay.

Largest Selling . . . Lowest Costing

CHEVROLET ADVANCE-DESIGN TRUCKS

Lead Them All!

CHEVROLET You'll discover a new kind of value when you drive and ride in these Advance-Design Chevrolet trucks. You'll find fleetness and flexibility, power and massive strength and long-lasting quality in every feature of body, frame, cab and chassis. Yet, you enjoy all these premiums *at lowest cost*, for Chevrolet trucks have 3-WAY THRIFT—low-cost operation, low-cost upkeep and the *lowest list prices in the entire truck field!*

CHEVROLET MOTOR DIVISION, *General Motors Corporation*, DETROIT 2, MICHIGAN

The leader offers all these features

Chevrolet's 4-SPEED SYNCHRO-MESH TRANSMISSION offers quicker, quieter and easier operation in Series 3800 and heavier duty trucks. Faster shifting maintains speed and momentum on grades.

Chevrolet trucks have the famous CAB THAT "BREATHES"*! Outside air is drawn in and used air forced out! Heated in cold weather.

Chevrolet's power-packed VALVE-IN-HEAD ENGINE provides improved durability and efficiency as well as the world's greatest economy for its size!

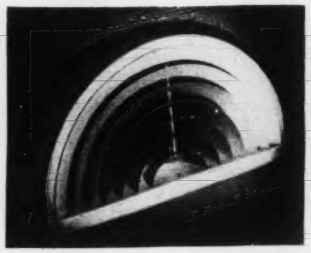
Chevrolet Advance-Design brings you the FLEXI-MOUNTED CAB, cushioned on rubber against road shocks, torsion and vibration.

Chevrolet's exclusive SPLINED REAR AXLE HUB CONNECTION adds greater strength and durability to heavy-duty models.

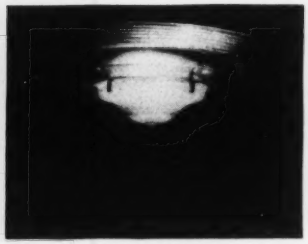
Uniweld, All-Steel Cab Construction • Large, Durable, Fully-Adjustable Seat • All-Round Visibility with Rear-Corner Windows* • Heavier Springs • Super-Strength Frames • Full-floating Hypoid Rear Axles on the 3600 Series and Heavier Duty Models • Specially Designed Brakes • Hydrovac Power Brakes on Series 5000 and 6000 Models • Standard Cab-to-Axle Length Dimensions • Multiple Color Options.

**Heating and ventilating system and rear-corner windows with de luxe equipment optional at extra cost.*

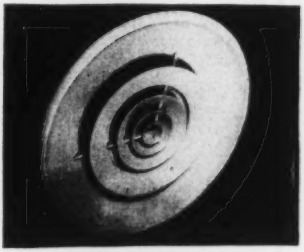
CHOOSE CHEVROLET TRUCKS FOR TRANSPORTATION UNLIMITED!



TYPE W diffuser, for wall mounting, is one of nine types available.



TYPE NL, with built-in light, is designed for flush-ceiling mounting.



TYPE C is used for flush-ceiling mounting with concealed ducts.

Selecting and Installing Air Diffusers

1 Foremost among the devices for control of air flow in air-conditioning systems are diffusers. Increasing use—with an attendant demand for blending of the units with the general architectural treatment—makes knowledge of their characteristics and installation requirements an essential for designers and builders. These data were supplied by the Anemostat Corporation of America, New York, N. Y.

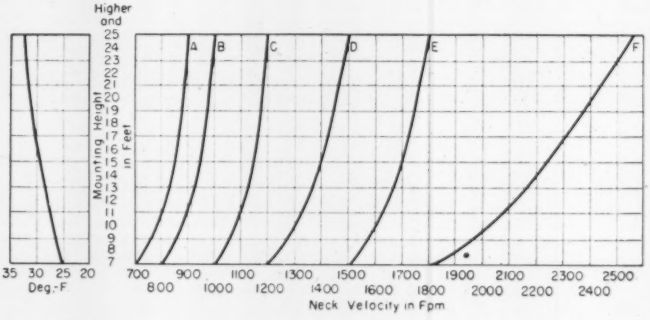
Helpful information for selecting the proper type of "aspirating" diffuser is given in Table I. These devices consist of concentric metal cones, shaped and spaced to draw room air in, mix it with about three times as much supply air, and discharge at low velocity in a series of planes to give draftless air conditioning.

TABLE I—AIR DIFFUSER SELECTION GUIDE

Key: X = Recommended. O = Not Recommended. A = Depends Upon Unit Heater and Fan. C = Only Sizes 30, 35, 40. E = Only if Used on Exposed Duct Work. F = Flush to Wall

		AC	AR	B	C	C-1	CSL	NL	HU-3	HU-4	W
Installation	Flush to Ceiling	X	X	X	X	X	O	X			F
	Exposed Ductwork	X	X	X	O	X	X	O	X	X	X
Function	Supply Only	O	X	X	X	X	X	X	X	X	X
	Supply and Exhaust	X	O	O	O	O	O	O	O	O	O
Aspiration %		30	30	35	35	30	35	30	A	A	35
Application	Comfort	X	X	X	X	X	X	X			X
	Commercial	X	X	X	X	X	X	X			X
	Industrial		X	X		X	O	O	X	X	X
Performance	Heating		X	X	X	X	X		X	X	X
	Cooling	X	X	X	X	X	X	X	O	O	X
	Ventilating	X	X	X	X	X	X	X			X
	Refrigeration		X			O	O	O	O	O	
May Be Combined With	Drop Light Fixture	X	X	X	X	X		O	E	E	O
	Direct Center Light	O	O	O	"CRL"	O	O	X	O	O	O
	Indirect Cove Light	O			"CSL"	X	X	O	O	O	O
	Projection Unit Heaters	O	O	O	O	O	O	O	X	X	O

Note: Type AC is the only supply-exhaust type diffuser. AR is especially useful for high rates of air change and temperature differentials. B is for general application under practically all conditions. C is for flush ceiling mounting only, anti-smudging. C-1 is adjustable for cooling, ventilating and projection heating. CSL is a cove light combination for use only where special lighting effect is desired. NL is a special lighting combination. HU-3 and HU-4 are mostly recommended for use in combination with vertical projection unit heaters. And W is the only sidewall diffuser.



Recommended maximum cooling temperature differential for the various mounting heights.

The recommended maximum heating temperature differential is sixty deg. F. for any ceiling height

GRAPH LINE

A- Film, Television and Sound Recording Studios, and Broadcasting Control Rooms.

B- Private Offices, Hotel Bedrooms, Sick Rooms, Broadcasting Studios and Residences.

C- Libraries, under Balconies of Theatres and Auditoriums, Concert Halls, Classrooms, Museums, and Hospital Operating Rooms.

D- General Offices, Restaurants, Theatres and Auditorium Ceilings, Lecture Halls, Stores, Large Hotel Dining Rooms, and Dance Halls.

E- Department Stores, Hotel Lobbies, Individual Exhibit Rooms and Restaurant Kitchens.

F- Factories, Store Rooms, Engine Room, Greenhouses, and spaces where duct noise is of no importance

2 Here is how a diffuser installation is designed: Suppose diffusers are to be selected for a 60 x 120-ft. department store, four air changes per hour being required. The system will supply incoming air only, duct work will be exposed and ceiling height will be 20 ft.

The ceiling is divided into two 60-ft. squares (rectangles with side ratios up to 3:2 are permissible), and a type B diffuser, picked from Table I because it is suitable for general use, is placed at the center of each. (Off-center locations may be used if the eccentricity is small.) Each unit must handle one-half the volume of circulated air, or 5,000 cfm. The proper neck velocity is obtained from curves at left. An example is curve E (department stores) which calls for 1,750 fpm. for a 20-ft. ceiling. Curve F (factories, etc.) calls for 2,400 fpm. for the same ceiling height, if that were the structure under consideration.

TABLE II—CAPACITIES OF TYPE B DIFFUSERS IN CFM

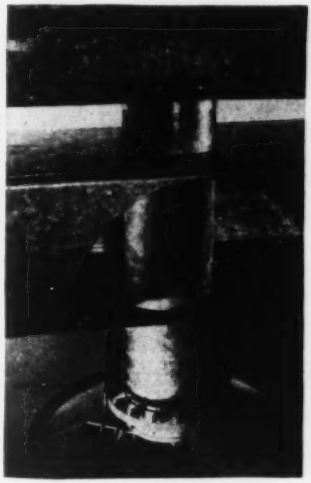
Size No.	Neck Dia. In.	Neck Area Sq. In.	Neck Area Sq. Ft.	NECK VELOCITY IN FEET PER MINUTE 800	1000	1100	1200	1300	1400	1500	1600	1700	1800	2000	2500	3000
10	4	12.56	0.087	69.8	87.3	96.0	105	113	122	131	140	148	157	175	218	262
12.5	5	19.63	0.136	109	136	150	164	177	191	205	218	232	245	273	341	409
15	6	28.27	0.196	157	196	216	236	255	275	295	314	334	353	393	491	589
20	8	50.26	0.349	279	349	384	419	454	489	524	558	593	628	698	873	1047
25	10	78.54	0.545	436	545	600	655	709	764	818	873	927	982	1091	1364	1636
30	12	113.10	0.785	628	785	864	942	1021	1100	1178	1257	1335	1414	1571	1964	2356
35	14	153.94	1.069	855	1069	1176	1283	1390	1497	1604	1710	1817	1924	2138	2673	3207
40	16	201.06	1.396	1117	1396	1536	1676	1815	1955	2094	2234	2374	2513	2793	3491	4189
45	18	254.47	1.767	1414	1767	1944	2121	2297	2474	2651	2828	3004	3181	3534	4418	5302
50	20	314.16	2.181	1745	2182	2400	2618	2836	3054	3272	3491	3709	3927	4363	5454	6545
55	22	380.13	2.639	2112	2640	2904	3168	3432	3696	3960	4224	4488	4752	5280	6600	7919
60	24	452.39	3.141	2513	3142	3456	3770	4084	4398	4712	5027	5341	5655	6283	7854	9425
65	26	530.93	3.687	2950	3687	4056	4424	4793	5162	5531	5899	6268	6637	7374	9218	11061
75	30	706.86	4.908	3927	4909	5400	5891	6381	6872	7363	7854	8345	8836	9818	12272	14726
95	38	1134.10	7.875	6301	7876	8663	9451	10238	11026	11814	12601	13389	14176	15751	19689	23627

3 According to Table II, a size 60 unit is the smallest that will supply 5,000 cfm. at 1,750 fpm. Actually size 60 delivers 5,000 cfm. at 1,555 fpm.

TABLE III—RADIUS OF DIFFUSION IN FEET

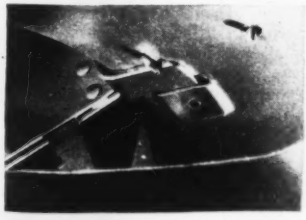
Size No.	Neck Dia. In.	NECK VELOCITIES IN FEET PER MINUTE 800	1000	1100	1200	1300	1400	1500	1600	1700	1800	2000	2500	3000
10	4	3-5	3-6	3-6	3-7	3-7	3-7	3-7	3-8	4-8	4-8	4-9	5-10	5-11
12.5	5	3-7	3-7	4-8	4-8	4-9	4-9	4-9	4-10	5-10	5-10	5-11	6-12	7-14
15	6	4-8	4-9	4-9	4-9	4-10	5-10	5-11	5-11	5-11	6-12	6-12	6-13	7-15	8-17
20	8	5-11	6-12	6-12	6-13	6-13	7-14	7-15	7-15	8-16	8-16	8-17	10-20	11-23
25	10	6-13	7-15	7-16	8-16	8-17	8-17	9-18	9-19	9-20	10-20	10-22	12-25	14-28
30	12	8-16	9-18	9-19	9-19	10-20	10-21	11-22	11-23	11-23	12-24	13-26	15-30	17-34
35	14	9-19	10-21	10-22	11-23	12-24	12-24	12-25	13-26	13-27	14-28	15-30	17-35	20-39
40	16	10-22	11-24	12-25	13-26	13-27	14-28	14-29	15-30	15-31	16-32	17-34	20-40	22-45
45	18	12-24	13-27	13-28	14-29	15-30	15-31	16-33	17-34	17-35	18-36	19-39	22-45	25-50
50	20	13-27	14-30	15-31	16-32	16-33	17-35	18-36	18-37	19-39	20-40	21-43	25-50	28-56
55	22	14-30	16-33	17-34	17-35	18-37	19-39	20-40	20-41	21-43	22-44	23-47	27-54	31-62
60	24	16-32	17-35	18-37	19-39	20-40	21-42	21-43	22-45	23-47	24-48	25-51	30-60	33-67
65	26	17-35	19-38	20-40	21-42	21-44	22-45	23-47	24-49	25-50	26-52	28-55	32-64	36-73
75	30	20-40	22-44	23-46	24-48	25-50	26-52	27-54	28-56	29-58	30-60	32-64	37-74	42-84
95	38	25-51	27-56	29-58	30-61	31-63	33-66	34-69	35-71	36-74	38-76	40-81	47-94	53-106

4 A final check is made by consulting Table III for the radius of diffusion. For a 1,500-fpm. velocity, table indicates a 21 to 43-ft. radius for size 60.

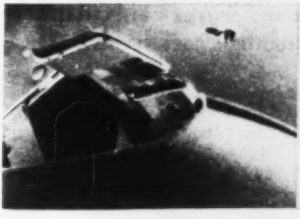


TYPE AC DIFFUSER, designed to handle supply and exhaust, fits a double-duct installation and has passageways for two air streams. The exhaust duct (top), supply duct and take-off pipes are installed by the sheet-metal contractor. After disassembling diffuser (in a manner similar to that shown below for the Type C1 diffuser), a diffuser specialist attaches the outer cone to the take-off before replacing inner assembly.

Typical Installation Procedure (Type C1)



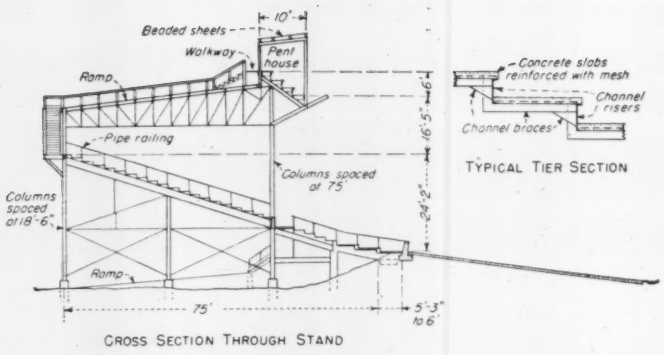
STEP 1. Press Button.



STEP 2. Turn inner assembly.

STEP 3. Lift assembly out.

STEP FOUR. Attach outer cone to take-off, install equallizing deflector at bottom of duct, replace inner assembly (reverse of steps 1 to 3).



CROSS SECTION THROUGH STAND

Standard grandstand section developed to ease future speedway expansions

Earl R. Ellis
H. D. Tousley Co., Inc.,
Indianapolis, Ind.

The owners of the famed Indianapolis Motor Speedway at Indianapolis, Ind., had two objectives when they asked for a design for a new grandstand on the southwest curve of the race track:

They wanted to provide better accommodations for spectators than were afforded by the existing wood stands, and they wanted to develop a standard section for their stands that would permit easy and relatively cheap extension as funds and needs might dictate.

Answer to both requirements was the development of a steel and reinforced concrete structure consisting of a lower deck of maximum practicable depth, a roof of conventional design and a longitudinal penthouse placed atop and partly cantilevered over the forward roof columns.

Location of the new stand—which will be the first three sections of 14 projected of the same type—is at a curve, where spectators will have an unobstructed view of the service pits, the starting and finish line, the west straightaway and the infield.

The track has a straightaway width of 50 ft., and at the curve is widened by adding 4 ft. on the outside, the outer edge of the straightaway and curve being connected by a short spiral. Along this spiral is a 3 ft. high reinforced concrete retaining wall with its inside face normal to the track surface.

The inside edge of the track is at a constant level both on the straightaway and curve. In contrast, the outer edge is elevated 6 in. on the straightaway and up to a maximum of 8 ft. on the curve. Transition from straightaway to curve superelevation is accomplished in a short approach at the point of curvature so that practically the entire outer edge of the curve pavement is a constant 8 ft. above the inner edge.

From these data it was apparent that a standard section could readily be adapted to the curve location. One such section forms a complete stand by itself, and when placed in a series of two or more adjoining sections provides a continuous stand that follows the curve of the track.

The penthouse atop the stand represents a compromise between the owners' desire for double-deck stands to increase capacity and the limitations imposed by provisions for good visibility from the upper deck without gaining too much in height of the stand itself. Height of the penthouse roof is 50 ft. To obtain satisfactory sight lines, the 75-ft. longitudinal carrying truss and its supporting columns were set back about 30 ft. from the outer edge of the curve.

In plan, a typical section of the stand is wedge shaped, with the sides formed by extending the radii of the track curve through the columns in the front row.

The rows of seats are placed in the form of chords of circular arcs paralleling the track. This arrangement greatly simplified the framing.

Platforms of seat tiers are slabs of reinforced concrete on channel risers, supported by structural steel beams and columns. Penthouse seat platforms are built of wood to reduce the dead load and are supported by structural steel risers and beams partly cantilevered over the longitudinal carrying truss.

Access to the penthouse is by short flights of stairs at the rear of the stand, connecting lower-deck transverse aisles with landings at the roof line. Ramps on the roof lead from the stair landings to a longitudinal walkway in the rear of the upper tier of seats. The roof is of galvanized sheets over steel purlins and trusses.

To be ready for use in May of this year, the three sections will total 217 ft. in length and will be 75 ft. deep.

Structural design for the stand was by Pierce and Gruber, structural engineers, and the general contractor was the H. D. Tousley Co., Inc.

Sound waves cure smog, chemical society hears

Super-powered sound waves, inaudible but able to be felt with the hand, were prescribed for removing smoke and dust from the atmosphere by Hillary W. St. Clair at the American Chemical Society meeting in San Francisco last week.

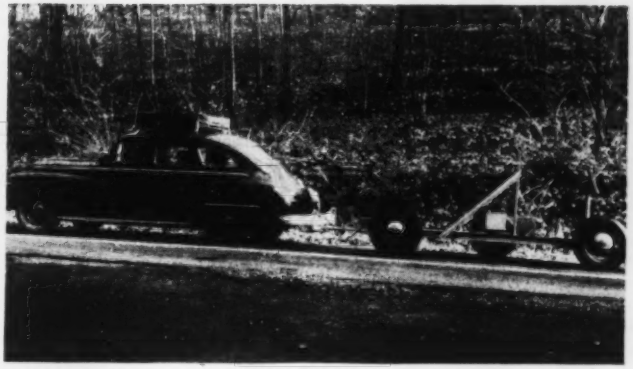
According to Mr. St. Clair, sound so intense that it can float lead shot in the air will cause smoke or dust particles to assemble in thin layers, too heavy to remain suspended in the atmosphere. Calling this action "sonic agglomeration," he said that frequencies up to 50,000 vibrations per second can be used to clean the air and still be attenuated so as to cause no objectionable noise.

This effect has been discovered by shooting superpowered sound waves through glass tubes over smoke of various types. Observations have shown that layers of suspended smog form at intervals equal to one-half the wavelength of the sound, and the time for agglomeration varies from a few seconds to ten or fifteen, depending upon particle size and concentration.

Mr. St. Clair is carrying out this experimental work at the eastern experiment station, College Park, Md., of the United States Bureau of Mines. His paper was presented before the division of industrial and engineering chemistry.

Paul L. Magill, supervisor of air and water pollution research at the Stanford Research Institute, California, informed the division of studies now under way of causes and measurements of irritating smog.

Methods of studying dust conditions in coal mines and application to atmospheric smog were discussed by faculty members of the Pennsylvania State College, school of mineral industries. Apparatus described is said to draw dust laden air through an alcohol solution which traps the dust.



Wheel-mounted elevation meter records changes at high speed

An elevation meter on wheels that promises great savings in shoe leather and time has been developed at the Sun Physical Laboratory in Newtown Square, Pa.

Heart of the device is an electronic calculator mounted in a special three-wheel trailer for towing by an automobile. As the trailer moves along roads or across fields, the calculator makes continuous determinations of change in elevation. Elevation may be read at any point on a counter resembling the conventional mileage odometer.

Elevation differences are established instantaneously from recorded values of the length of path and the sine of the angle of inclination. The length of path – a function of velocity – is measured by equipment that is directly geared to the rear wheel of the trailer and puts out an electrical signal proportional to the speed at which it is moving. A device mounted halfway between the front and rear wheels, gives an electrical signal proportional to the angle of inclination.

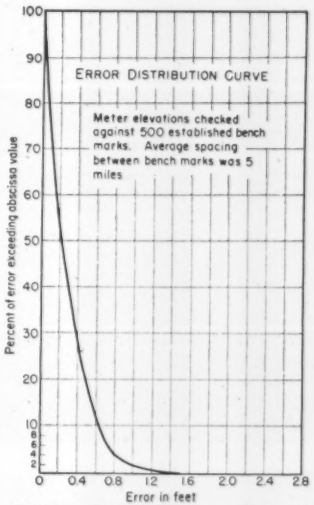
The electronic calculator carries out the solution of elevation differences from these recorded distance and angle measurements. Change in elevation is indicated directly in feet on an automatic counter, and an auxiliary electric meter gives readings in tenths of feet.

Advantages of the elevation meter over conventional methods of land surveying are derived chiefly from its higher speed of operation and resulting reduction in cost per mile.

The car may be driven up to 25 mph. and it is frequently possible to cover distances as great as 60 to 80 miles per day, depending upon the degree of accuracy demanded and the number of stations at which elevations are required.

Error distribution values on the accompanying curve indicate the accuracy obtainable with the meter. This curve was established by comparing elevations determined by the meter with bench marks determined by third order spirit levels.

Fred M. Mayes and Ford L. Johnson of the Physical Division of the research and development department are credited as co-inventors of the elevation meter by the Sun Oil Co. of Philadelphia, Pa. Called the Johnson elevation meter, the device has been used by Sun Oil in surveys for the United States Geological Survey. It will be exploited commercially by Sperry-Sun Well Surveying Co.



ACCURACY CHECK was made against established bench marks. Only 10 percent of all errors (on 500 five-mile runs) exceeded 0.65 ft.

4 POTENT PREVENTIVES OF PUMPING PROBLEMS

...by YEOMANS

In buildings designed with real excellence in mind, it is natural to find Yeomans Pumps handling the four basic pumping functions—water booster, water circulation, drainage and sewage ejection.

WATER BOOSTER

In hundreds of the world's foremost buildings, Yeomans Pumps are quietly, dependably at work—many of them after many years of quiet, flawless service.

WATER CIRCULATION

Long experience, painstaking engineering and insistence on fine workmanship are fundamentals of Yeomans Pumps, and the true reasons why they deliver satisfaction.

DRAINAGE DISPOSAL

Famous for the "troubles they prevent"—for their sturdy, lasting reliability—are these durable two: Yeomans Heavy Duty Bilge Pump for handling liquids free from solids, and Yeomans Screenless Ejector for wastes containing solids.

SEWAGE EJECTION

Few mechanical devices have records comparable to that of the trusty Shona* Pneumatic Sewage Ejector—for unfailing performance the world over. Yeomans also builds centrifugal sewage pumps for both wet pit and dry pit installations.

You find full information, with engineering data and helpful installation drawings, in Sweet's Files — Architectural and Engineering. Also Yeomans Bulletins "belong" in every Data File. Use the coupon for your bulletin request.

*Trade Mark Reg. U.S. Pat. Off.

YEOMANS

Yeomans Brothers Company
1445 North Dayton Street
Chicago 22, Illinois

☐ Water Booster ☐ Water Circulation
☐ Drainage ☐ Sewage Disposal

Name.....
Firm.....
Address.....
City, State.....

LOST!

3 BILLION DOLLARS EVERY YEAR

The annual toll taken by the elements that cause rust and corrosion is staggering. How much of this are you *needlessly* paying in costly replacement and maintenance *because you didn't* provide protection for exposed installations and equipment?

Hot-Dip Galvanizing Seals in the Base Metal

When base metal is encased in rust-preventing zinc by the Hot-Dip Galvanizing process the ravages of rust and corrosion can't touch the metal because it is *sealed in*. Rust and corrosive elements are *sealed out*.

Write for Membership Roster

Every member of this Association has the cumulative experience of the entire membership at his disposal. He has the most modern equipment and a trained organization that are at your service. For membership roster, write The Secretary, American Hot Dip Galvanizers Association, Inc., First National Bank Building, Pittsburgh, Pa.

hot-dip GALVANIZING

MEN AND JOBS

Stephen W. Benedict, formerly materials engineer in the cement and concreting materials section of the National Bureau of Standards, has been made director of research of the Master Builders Co., Cleveland, Ohio. He is a civil engineer graduate of the University of Illinois, and was with the Illinois division of highways and later a structural engineer with the National Advisory Committee for Aeronautics, Washington, D. C.

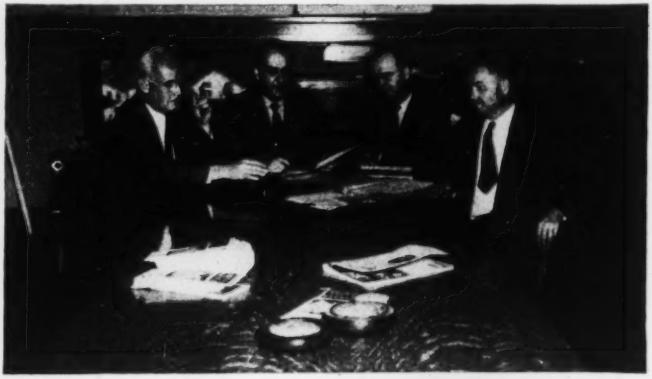
L. M. Hunter, engineer, has been named assistant commissioner of works, Ottawa, Ont., and is succeeded in his old post by assistant **H. W. Courtemanche** who becomes road engineer.

Robert T. Blair, deputy building inspector of Vancouver, B. C., has retired after 22 years of service. He studied engineering at the Royal Technical College in Scotland. Until 1926 when he joined the city service, he worked on construction jobs with the Canadian Pacific, and Grand Trunk railways. He is succeeded by **D. A. Matheson.**

Manuel Cutler, superintendent of bridges and buildings for Milwaukee, who began with the city as bridge designer in 1916, will retire from office on May 1.

Two Ventura, Calif., building officials, **V. M. Capesius,** city engineer,

John W. Sibert, Jr., chief of the construction division, Garrison District, Corps of Engineers, is flanked by his aides, Harlan G. Hutchins and George J. Gavin, resident engineers respectively on the townsite and embankment at Garrison Dam on the Missouri River above Bismarck, N. D.



Four South Dakota State Highway Department employees talk over their total of 113 years of service. Each received an award for at least 25 years in the South Dakota department and other departments affiliated with the American Association of State Highway Officials. Left to right are H. S. S. Sternberg, plans engineer; K. R. Scurr, bridge engineer; Philo H. Schultz, assistant bridge engineer, and Leo A. Ihli, Pierre district engineer.

and **Donald Knight**, building inspector, have submitted resignations to the city council, announcing plans to go into business for themselves in Ventura.

F. C. Wightman, and **Donald McDonald**, of Amherst, N. S., and **Russel Carey**, of Sackville, N. B. have formed a civil engineering firm, at Amherst, with branches at Sackville, and Halifax, N. S. Wightman has been town engineer of Amherst and Kentville, N. S. McDonald has been engineer and business manager of Mount Allison University, Sackville. Carey has been in civil engineering for some time.

Harry F. Harris, engineer of Mercer County, N. J., since 1918, has resigned.

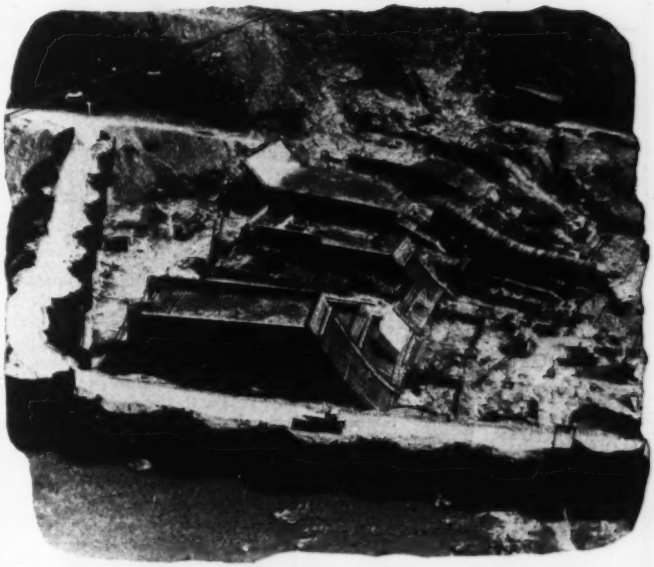
Clarence Baldwin, assistant engineer of Black Hawk County, Iowa, has been made county engineer, succeeding **R. L. Stevenson**, who resigned to go with the A. Olson Const. Co., bridge contractors at Waterloo, Iowa.

P. D. Carlson, highway engineer of Aitkin County, Minn., has been named highway engineer of Morrison County, succeeding **Albert Lehman**, who will start an engineering practice at Little Falls, Minn.

Linwood G. Mort, Guilford, Conn., consulting engineer, is head of the real assets division of the State Comptroller's Office on a temporary basis, to supervise new construction and major repairs on state-owned buildings. He was town engineer of Griswold from 1932 to 1935, planning engineer of Work Progress Administration in Connecticut from 1935 to

(*Continued on page 30*)

In direct charge of a $1 million contract covering floor slab construction for the Corps of Engineers' $13 million Algiers Lock on the Intracoastal Canal south of New Orleans are, left to right, T. A. Wynn, assistant construction superintendent for Stevens Bros. and the Miller-Hutchinson Co., New Orleans, contractors on the work; Lt. Col. Thomas J. Bowen, officer in charge of the project; Horace Dear, field engineer; and J. H. Dunham, chief inspector.



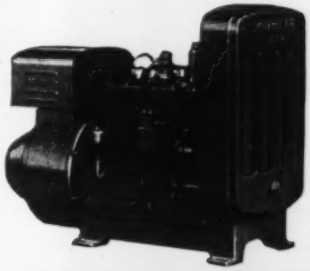
"Toe" on the downstream side of Etowah Dam. Estimated cost of the finished project is $27,000,000.00.

Night operations at Etowah Dam lighted by KOHLER *Electric Plants*

Long strings of floodlights stretching across the overhead cable provide night illumination that enables engineers, carpenters, welders and other workers to carry on round-the-clock schedules at the gigantic dam on Etowah River, near Cartersville, Georgia. Kohler Electric Plants provide the current for these, and for numerous other floodlights. When completed, the dam will be 155 feet wide at the base and 16 feet wide at the top where there will be a road for automobile traffic. On many of the world's largest construction projects, Kohler Electric Plants have been used for lighting, pumps, motors and power tools—because they are rugged, reliable, convenient and economical.

For stand-by protection, Kohler Electric Plants also fill important requirements. In public or industrial buildings, and in private homes, they assure continued operation of vital equipment when storms or accidents interrupt central station electricity.

Sizes are from 750 watts to 10 KW, with or without metal housing and skid base for portable service. Write for illustrated folder D-4. Kohler Co., Kohler, Wisconsin. Established 1873.



Kohler Electric Plant 3A21, 3KW, 115 volt AC. Length 41", width 16", height 27¼".

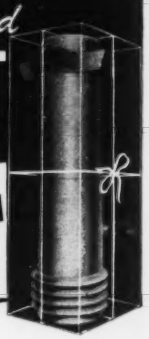
KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS

A NEW Idea in Heating

Packaged

HEAT



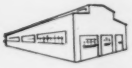
IT'S MORE

Economical
Flexible
Practical

Even with inflated fuel costs, HEATING bills come tumbling down when THERMOBLOC's forced circulation of live, warm air is used to replace the costly cumbersome systems that are out-dated by today's needs. Savings are impressive enough for top management's attention! Get the facts from this bulletin.

Economical to buy and install. Fully automatic, no attendant required.

High efficiencies—THERMOBLOCS give 82 to 86% using GAS or OIL. Heat 3000 to 4000 sq. ft. within ducts or piping.



Connect THERMOBLOC to fuel and power line and start heating—ideal for plants, warehouses, etc.

Flexible—each THERMOBLOC works independently—start up only those needed—when needed—use them for cool air circulation in summer.

THERMOBLOC DIVISION

PRAT-DANIEL CORP. Manufacturers of the well-known Thermix Power Plant Equipment

71 Water St., East Port Chester, Conn.

Gentlemen:
Please send me your bulletin HEAT—
Where you want it... *When* you want it!

Name_____ Title_____

Company_____

Address_____

1937, chief engineer and assistant director of operations for WPA from 1937 to 1939, and was vice-president of the Haller Engineering Associates, Inc., Cambridge, Mass., from 1939 to 1944.

Victor W. Anckaitis, borough engineer of Wilson Borough, for the last twenty years, has also been appointed city engineer of Easton, Pa. He is a graduate of Lafayette College, 1925.

Earl P. Moseley has been appointed assistant hydraulic engineer for the New England Power Service Co., Boston. A graduate of the University of Vermont, he joined the New England Electric System staff in 1921. He was identified with the construction of its hydroelectric developments on the Deerfield and Connecticut Rivers at the Searsburg, Harriman, Sherman, Bellows Falls and Comerford plants. In 1936 he was transferred to the hydraulic department, and has since been active in design, construction and maintenance work, including mapping projects.

Alex. Gray, St. John, N. B., a veteran civil engineer, has been made a member of the Order of the British Empire. Going to Canada from Scotland in 1905, Mr. Gray was named assistant engineer of the Dominion Coal Co., Sydney, N. S. From 1906 to 1911, he was on the engineering staff of the Grand Trunk Railway at Ottawa, Ont. In 1911 he left the railroad and joined the Canadian public works department at Ottawa, and in 1927, he was appointed chief engineer and manager of St. John, N. B., harbor facilities. He retired in 1946 after more than 40 years of engineering work.

First-stage construction, involving two 1,600-ft. diversion tunnels, on the Corps of Engineers' Blakely Mountain reservoir near Hot Springs, Ark., is supervised by, left to right, Ralph A. Bell, joint venturer with Stolte, Inc., C. A. Harney, and United Concrete Pipe Corp., all of California; Ted Stewart, tunnel superintendent; Col. John H. Trescot, resident engineer; C. H. Smith, chief inspector; and G. L. Curtis, project engineer for the contractors.

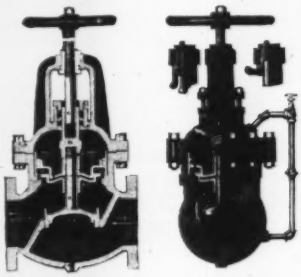
When the first concrete was placed in the construction of the $40,000,000 Whitney Dam, on the Brazos River near Waco, Tex., representatives from the Galveston District of the Corps of Engineers, and contractors, were on hand. Pictured from left to right are: Lee Wilson, assistant resident engineer (glasses); L. P. Reed, contractor (dark helmet); K. M. Smith, chief of the construction division, Galveston District; Simon Piedmont, general superintendent for Reed Construction Co.; and Mark Haima, resident engineer. Shown in the background (right) are two workers swinging a 4 cu. yd. bucket, containing the first concrete to be placed.

Positive Safety When Engine Turbines or Compressors Overspeed

GOLDEN-ANDERSON

throttle and automatic

engine stop VALVES



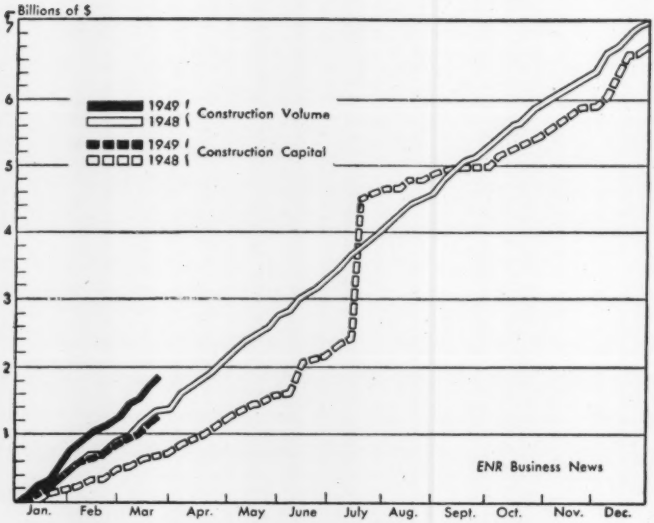
G-A Combined Throttle and Automatic Engine Stop Valve, Globe Pattern.

G-A Throttle and Automatic Engine Stop Valves give instant, automatic protection from damage when turbines, compressors or engines overspeed. Remote control system also permits valve operation from any station through a system of Solenoid Trip Pilot Valves. "Double Corliss" dashpot assembly effectively cushions the valve, preventing banging, chatter or spinning under any flow condition.

Valves are furnished extra heavy throughout, with the result that no distortion or warping is encountered under stress or strain. Available in standard or toggle yoke designs, angle, globe, elbow patterns. Let us work with you on any difficult Valve problem.

LIFE AND PROPERTY PROTECTION
VALVES SINCE 1905

GOLDEN-ANDERSON *Valve* **SPECIALTY CO.** Keenan Building, Pittsburgh 22, Pa.



March construction volume brings total for quarter 31% over 1948

Heavy engineering contracts hit a new high for the year—$148 million per week—in March. The figure was 6 percent above February, and 17 percent above the average week in March last year.

Engineering construction for the first quarter is now $1.9 billion—31 percent more than in 1948.

Total construction in March was $743 million, of which 54 percent, or $399 million, was public. Private contracts, at $344 million, are 8 percent below last month.

Earthwork and drainage projects were the chief factor in March public construction totals, although public buildings and highways also were higher. Earthwork contracts increased more than 600 percent over February, due largely to the $28.2 million Detroit Dam in Oregon; $15.2 million tunnels at the Garrison Dam project in North Dakota; the $11.3 million Cedar Bluff Dam of the Bureau of Reclamation's Missouri River Basin project in Kansas; and $11 million at S. Dakota's Ft. Randall Reservoir.

Public building gained 79 percent over February, to average $32 million a week in March. A $21 million federal office building in Washington, and two veterans hospitals totaling $11.6 million, highlighted the month. Highway awards increased 36 percent over February to $10 million per week; sewerage 22 percent, to a weekly $3.6 million; and waterworks 16 percent to almost $3 million a week. Public bridges, the only type of public construction to decline, fell 38 percent to $5 million weekly in March.

Private construction contracts, at $68.8 million per week in March, fell 26 percent from the high February average of $93.4 million, but were 20 percent higher than in January. Commercial and industrial building fell 26 and 28 percent respectively from their February high—commercial to $41 million—industrial to $22 million. Residential contracts were 79 percent of the commercial total in March, and are running 39 percent ahead of 1948 at the three months mark. Private bridge construction rose sharply from a $22 thousand February average, to $91 thousand per week.

New capital for construction in March was $100 million weekly, 30 percent above the March 1948 average, and less than 1 percent below last month. Of the $503 million total, $214 million or 42 percent was subscribed to corporate securities, and $289 or 58 percent to state and municipal bond and note issues. The total of corporate securities issued for construction purposes in the first three months of 1949 is 45 percent greater than last year, while state and municipal borrowing for construction is up 85 percent.

ENGINEERING CONSTRUCTION CONTRACTS REPORTED TO ENGINEERING NEWS-RECORD—MARCH, 1949

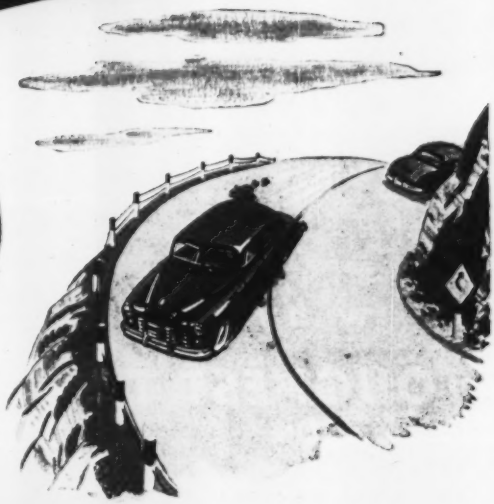
Engineering News-Record *reports continental U. S. Construction projects of the following minimum costs — Waterworks, excavation, drainage and irrigation,* $28,000; *other public works* $50,000; *industrial buildings,* $68,000; *other buildings,* $250,000

Five Weeks — Thousands of Dollars (000 Omitted)

	March, 1949						Total U. S. Cumulative Three Months		% Change	Canada
	New England	Middle Atlantic	South	Mid-West	West of Mississippi	Far West	U. S.	1949	1948	'48–'49	March '49
Public Works											
Waterworks	499	660	5,182	4,037	2,880	1,674	**14,932**	**34,847**	40,644	− 14	4,022
Sewerage	971	4,298	2,037	3,589	3,565	3,707	**18,167**	**48,290**	40,917	+ 18	1,471
Bridges	452	10,368	3,141	1,007	6,969	3,225	**25,162**	**87,264**	65,825	+ 33	1,079
Earthwork and waterways	507	5,962	8,915	859	48,503	41,782	**106,528**	**168,389**	144,381	+ 17	1,220
Streets and roads	1,462	5,806	11,429	4,966	17,941	8,797	**50,401**	**127,173**	178,223	− 29	1,717
Public buildings, residential	2,579	16,446	1,362	2,382	1,881	2,232	**26,882**	**84,772**	24,173	+250	800
Other public buildings	5,478	35,123	12,483	24,885	26,656	32,114	**136,739**	**316,945**	223,987	+ 42	4,479
Unclassified	818	2,459	3,314	615	7,444	6,010	**20,660**	**56,983**	51,290	+ 11	3,279
Total public	**12,766**	**81,122**	**47,863**	**42,340**	**115,839**	**99,541**	**399,471**	**924,663**	**769,440**	**+ 20**	**18,067**
Federal government (included in above classifications)	1,267	24,597	10,729	8,601	58,976	59,147	**163,317**	**312,989**	289,508	+ 8	2,111
Private											
Bridges	.....	.....	.....	307	148	.....	**455**	**674**	.....	.....	50
Industrial buildings	2,174	29,898	18,015	22,383	32,736	6,556	**111,762**	**275,917**	163,471	+ 69	14,375
Com'l. buildings, residential	4,292	31,178	11,434	24,746	57,376	33,133	**162,149**	**431,271**	309,652	+ 39	15,866
Other commercial buildings	1,576	8,011	8,455	10,571	9,953	4,893	**43,459**	**158,738**	110,248	+ 44	5,425
Unclassified	428	310	3,609	6,221	14,818	847	**26,233**	**81,176**	71,883	+ 13	870
Total private	**8,470**	**69,397**	**41,513**	**64,218**	**115,031**	**45,429**	**344,058**	**947,776**	**655,254**	**+ 45**	**36,586**
Total Engineering Construction:											
March, 1949—5 weeks	**21,236**	**150,519**	**89,376**	**106,558**	**230,870**	**144,970**	**743,529**	.....	.....	.....	**54,653**
February, 1949—4 weeks	16,285	192,713	59,016	30,735	144,375	119,960	**563,084**	.....	.....	.....	35,381
March, 1948—4 weeks	12,946	168,905	85,239	35,144	105,001	100,861	**508,096**	.....	.....	.....	15,083
Three Months—1949	**58,027**	**488,866**	**275,378**	**212,734**	**511,754**	**325,680**	.....	**1,872,439**	.....	.....	**118,419**
Three Months—1948	67,971	408,427	253,497	126,946	372,806	195,047	.....	.....	1,424,694	.....	87,354
% Change '48 to '49	−15	+20	+9	+68	+37	+67	.....	.....	.....	+ 31	+14

Will it hold?

Prevent hidden decay



use chlorophenol treated Posts!

The damage termites do isn't always apparent to the naked eye. They bore from within, weaken the cellular structure of wood and instead of sound, strong posts, you have without knowing it, a weakened guard rail—the means to a potential tragedy!

Remember! A guard rail is only as strong as its weakest post. And remember too, PENTAchlorophenol, the *clean* wood preservative, gives positive lasting protection against termites and decay.

For further information about PENTAchlorophenol, write to Dow. Address Dept. PE 36.

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

DOW penta- chlorophenol

CUT YOUR DOWNTIME
CUT YOUR COSTS
with the
TOUGHEST TIRE EVER BUILT . . .
THE
Firestone
ROCK GRIP
DOWNTIME is a profit killer. To cut costs you've got to have a tire that is tough enough and strong enough to stand up on the job day in and day out without time loss. Firestone tires do that.
There's a Firestone tire for every off-the-highway job. There's the strong, rugged Rock Grip with a tough, massive tread for rock work, strip mining — for every job where punishment is severe. There's the Ground Grip with long, strong traction bars for earth biting power and maximum traction. There's the Earth Mover for free rolling wheels where maximum flotation and carrying capacity are required.
Firestone Off-the-Highway tires and Firestone service are cutting costs for contractors everywhere. They will cut your costs too. A trial on your equipment will prove it.
Listen to the Voice of Firestone every Monday evening over NBC and Americana over NBC Network Television Stations
Copyright, 1949, The Firestone Tire & Rubber Co.
EARTH MOVER
GROUND GRIP
Firestone
OFF-THE-HIGHWAY TIRES

MUNICIPAL AFFAIRS

Expanding Cities

According to reports of the American Public Works Association, Houston, Tex., with its $110,000,000 spent for new plant construction in the last three and a half years, leads all cities in that respect. The New York tri-state metropolitan area ranks second with $88,600,000 according to the APWA figures.

Chicago topped all other industrial areas in the number of big new plants or additions, with 193, but was tied with Pittsburgh for third spot in value of construction, with $79,600,000.

Other leaders in industrial expansion include Detroit with $76,600,000; Cleveland, $75,800,000; Philadelphia-Camden, $56,100,000; Los Angeles, $55,700,000; San Francisco-Oakland, $48,700,000; and St. Louis, $41,200,000.

Community Improvement

A significant increase in interest and participation in community improvement activities is taking place, according to reports reaching the National Council for Community Improvement.

Many villages, towns and cities of all sizes have realized that things need to be done and are not only starting out to do them but in most cases are prepared to carry out their plans. It is reported that service clubs, chambers of commerce, women's clubs, garden clubs, veterans' organizations, church and educational groups, recreation leaders and others are joining hands in an all-out cooperative effort to make their home towns better.

Further information on this subject is available from the offices of the council at 1760 K St. N. W., Washington, D. C.

Traffic and Parking

Attempts to ease traffic congestion included these developments:

At Allentown, Pa., local merchants formed a corporation called Park & Shop, and on a quota system based on square feet of sales area 48 merchants put up $250,000.

At the present time, this corporation owns six parking lots and leases or licenses four more—all within 1,000 ft. of the main business district. The present capacity is 600 cars, soon to be increased to 900. A customer pays 25 cents for 4-hour parking, and gets his money back if he makes a minimum purchase that day at any Park & Shop store (varying from one to three dollars). A check by one store showed that the average customer taking the parking refund had spent $4.60 in the store.

A proposal for a $2,600,000 parking terminal development at Omaha, Neb. has been made by George Barton, Evanston, Ill., through the Omaha parking committee. He suggested that the city provide land and that private enterprise handle the building and operating of the parking facilities.

Mayor Bernard Samuel of Philadelphia, Pa., is urging expressways to carry traffic rapidly and safely through the city.

The Automobile Club of Southern Indiana is preparing a plan to channel main highway traffic around Evansville, Ind. When completed by club engineers, the plan will be presented to the state highway commission.

Business and professional interests at Lakeland, Fla., are investing many thousands of dollars in off-street parking facilities.

Main Street merchants in Memphis, Tenn., are urging additional parking space in the downtown business district. They see the possible specter of real estate values falling if 'store customer' can't find convenient parking space.

Boston, Mass., is seeking authority from the Massachusetts legislature to use profits from parking meters for construction of off-street parking facilities.

On May 19-20 the traffic engineering division of the Michigan Safety Conference will give an intensive course of instruction on traffic engineering fundamentals at the Book Cadillac Hotel, Detroit.

To stimulate further the life-saving exchange of traffic engineering ideas among cities, an annual cash award has been announced by Julien H. Harvey, manager, Accident Prevention Department, Association of Casualty and Surety Companies, New York City, for the best example of a traffic engineering project that has effectively reduced accidents or congestion. In explaining eligibility requirements for the award, Mr. Harvey emphasized that it will be given for the outstanding example and not the outstanding traffic engineer of the year. The person receiving the award will be selected solely on the basis of the quality of his submitted project.

NEW SKYSCRAPER at Toronto. Steel work is now going up on the 25-story head office building of the Bank of Nova Scotia on the northeast corner of King and Bay Sts., Toronto, Ont. Reproduced above is the architects' conception of how the building will look. The fourth tallest building in the British Empire, it will cost upwards of $10,000,000 and provide 280,000 sq. ft. of floor space. It will be faced with Indiana limestone. Mathers and Holdenby, and Beck and Eadie, Toronto, are the architects, and J. L. E. Price & Co., Toronto, the contractors. The bank will occupy the first seven floors and rent the rest.

Harbor Improvements

The city commission of Jersey City, N. J., has been asked to consider leasing a large tract of waterfront property with riparian rights for the construction by private capital of a $60,000,000 marine terminal facility on the New Jersey side of New York harbor, near Communipaw Creek.

The plan, submitted by Clarence McDonough, vice-president of the Foundation Co. of New York, calls for the immediate construction of a rail and ship terminal, with adjacent industrial development at a cost of $5,000,000 on a tract 1,500 by 670 ft. adjoining present facilities of the Central Railroad of New Jersey and the Lehigh Valley Railroad.

This would not interfere with the recently announced plan of the Port of New York Authority for development of the Pier A area.

Progress at Memphis

About 1200 ft. of the approach roadway on the Memphis side of the Tennessee Chute is nearing completion on the northeast edge of Presidents' Island in the Mississippi, where 2,700 ft. of willow fascine mattress have been placed. From the edge of

U. S. CAPITOL FOR A BACKGROUND—Steel work for the new South Capitol Street bridge at Washington frames the dome of the Capitol in the background. The new bridge, to be completed in November, crosses the Anacostia River. This view is taken from South Capitol and Q Streets, S. W. Wide World photo

the mattress to the top of the bank 2,700 ft. of rock revetment has been laid. About 3,500,000 yd. of hydraulic fill have been placed at the dam. Earl P. Houston of the U. S. Engineers, superintendent of the project, is making plans for the closure dam across the head of the Chute to shut out the current of the river to make a still-water bay. About 1,000 acres of new factory sites will be provided as part of the development.

Street Widening

A number of cities are considering widening of streets in crowded areas to facilitate traffic movement.

Indications that the proposed downtown street widening in Miami, Fla., may cost $1,000,000 or more are contained in preliminary results of a survey by the city's engineering division. City Engineer Ray Williams has estimated that $100,000 would be a conservative guess as to the cost of widening one block, with many building fronts to be set back.

The Tennessee highway department has announced plans for widening West End Ave., Nashville, from 20th to 32nd Ave. A contract has been signed for the work. One-third of the cost will be paid by the city, the other two-thirds by the state and federal governments.

White Plains, N. Y., county seat of Westchester County, is considering the widening of portions of Martine Ave. and Church St. Traffic regulations in that city were put to a severe test on March 21 when 30,000 persons attended the opening of a new department store branch store on Main St.

Test Fog Dispeller

The first test of "Fido" units for the $842,000 thermal fog dispersal system being installed at the Los Angeles airport was made recently. It was successful.

It is reported that 392 burners, each with three jet atomizer nozzles, will parallel both sides of the runway for 4,000 ft. and then fan out for 2,000 ft. into the approach zone. Each burner will protrude 14 in. above the ground and will shoot flames some 10 ft. into the air. Cheap diesel fuel will be burned to create the intense heat that will raise the saturation point of the atmosphere to absorb water vapor and thus clear the runway and adjacent areas of fog.

Smoke Control

In a move to strengthen enforcement of the smoke abatement ordinance of Buffalo, N. Y., the common council has approved a charter amendment transferring smoke control from the buildings division to the office of stationary engineers.

Representatives of the Elmira, N. Y., Association of Commerce and the Elmira citizens' smoke control committee are drafting a smoke and soot control ordinance. One of the first recommendations will be the employment of a smoke control engineer.

Among other cities working on this problem are New York; Pittsburgh, Pa.; Cincinnati, Ohio; Milwaukee, Wis.; Cleveland, Ohio, Detroit, Mich.; Louisville, Ky.; Providence, R. I.; and St. Louis, Mo.

Municipal Notes

A New York State Supreme Court order put a stop to the recent municipal employees strike at **Yonkers**. Labor leaders claimed it was an ex-parte use of injunction, but work was resumed. (ENR Mar. 10, p. 26.)

The **Chicago** Plan Commission has a plan for consolidating the city's far-flung government offices and court buildings into a civic center on the southwest side of the loop.

Fears of possible explosions from underground gasoline seepage in the west side business district of **Salt Lake City, Utah**, were largely allayed recently when a well, drilled to tap the reported gas pools, produced only minute quantities of the fuel.

The **Birmingham, Ala.**, city commission has awarded a contract to J. A. Jones Construction Co., Atlanta, Ga., and Charlotte, N. C., on a bid of $2,186,650 for completion of the new city hall.

Painting work has begun on the 20 bridges of **Toledo, Ohio**, some of which are said to have been neglected for 20 years.

Mayor Bernard J. Dowd of **Buffalo, N. Y.**, has approved a $2,311,522 program of capital improvements for the next fiscal year.

The **San Francisco** Chamber of Commerce has established a Civic Development Department to lead in the solution of problems of housing, traffic, urban redevelopment, transit, fire safety, and city planning.

The city council of **Montreal, Que.**, has approved a loan of $5,000,000 for use when required for local improvements in outlying districts of the city.

New York State's master plan for the 13.85-mile arterial highway system for **Watertown** calls for the long-range expenditure of $6,438,100; that for the 7.95-mile arterial route system for **Ithaca** to cost about $3,896,000.

Dining on fingernails these days?

WITH maintenance and new equipment costs still rising, your present equipment must work harder than ever if you're to earn a reasonable profit. And here's how Quaker State HD Oil can help.

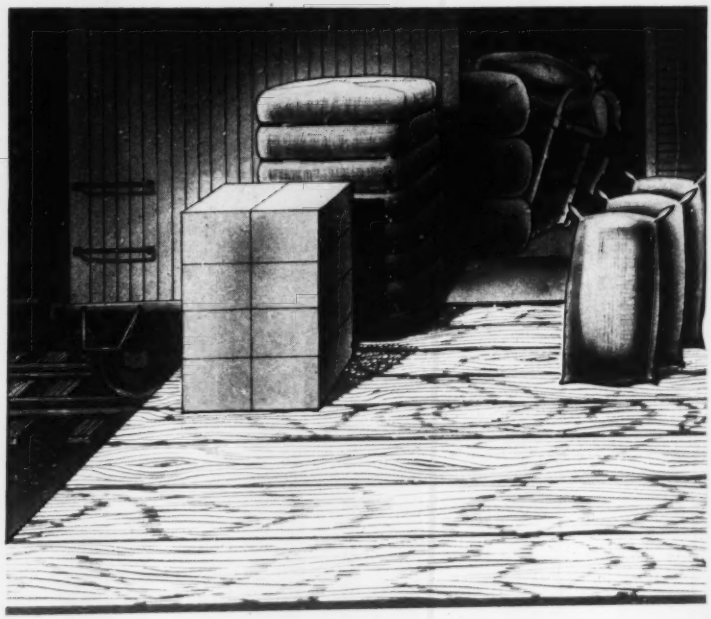
Quaker State HD Oil not only lubricates better, but it helps keep engines *clean*. It helps keep them free of ring-clogging, valve-sticking sludge, gum, and "varnish." It helps keep them out on the road making money for you.

Quaker State HD Oil is made from 100% pure Pennsylvania grade crude oil. It's always uniform, always dependable. Use it. Proper lubrication is *one* worry you can avoid!

QUAKER STATE HD OIL
AND SUPERFINE LUBRICANTS

Use Quaker State HD Oil for trucks, buses, taxis, tractors.
Use Quaker State Motor Oil for passenger cars.

QUAKER STATE OIL REFINING CORPORATION • OIL CITY, PENNSYLVANIA



Where Penta Makes Wood Last Longer

- Platforms and Decking
- Loading Docks
- Catwalks and Railings
- Ice Plants and Storage Houses
- Grandstands and Stadium Buildings
- Warehouses and Granaries
- Tool and Machinery Sheds
- Trestles and Bridges
- Guardrails
- Utility Poles
- Signs and Billboards
- Factory Flooring
- Sills, Plates, Joists
- Rafters and Roofing
- Sash and Doors
- Ladders and Stairs

PENTA CHLOROPHENOL preservative

(Monsanto's Santophen 20)

clean, long-lasting protection

Wood properly treated with Penta is CLEAN and STAYS CLEAN. It resists leaching even under conditions of high humidity or moisture; is paintable when formulated with suitable carrier oils. This non-bleeding quality of Penta is especially important where people or packaged goods come in contact with wood...It will not stain; has no objectionable odor.

Penta's high toxic value assures years of dependable protection against exposure, wood-rotting fungi, termites and other wood-boring insects. This toxicity never varies, since the chemical characteristics of Penta are always constant, always laboratory-controlled.

The Penta treatment, by either pressure or open tank method, is simple. To learn more about its advantages, send for your copy of a new Monsanto folder, "Monsanto Pentachlorophenol for Preserving Wood in Industrial Construction." Address MONSANTO CHEMICAL COMPANY, Desk C, Organic Chemicals Division, 1759 South Second Street, St. Louis 4, Missouri.

Santophen. Reg. U. S. Pat. Off.

MONSANTO CHEMICAL COMPANY
Desk C, Organic Chemicals Division
1759 South Second Street, St. Louis 4, Missouri

Please send me a copy of your folder on Penta for Industrial Construction.

Name _____ Title _____

Company _____

Address _____

City _____ State _____

SERVING INDUSTRY...WHICH SERVES MANKIND

MONSANTO
CHEMICALS — PLASTICS

OBITUARY

Ralph Foster Wilcoxon, 56, a civil engineer with the United States Geological Survey for the last 35 years, died March 19 in Washington, D. C. Mr. Wilcoxon worked for 25 years in the field service of the Geological Survey. He was a specialist in the construction of topographic maps. During World War I, he was a second lieutenant in the Corps of Engineers. For the last 10 years, he has been stationed in Washington as assistant regional engineer of the Atlantic region.

Boyd Brown, 51, sixth district South Carolina Highway commissioner, died March 18, at his home in Winnsboro, S. C.

Lewis Shepard, 42, highway engineer of Houston County, Minn., died recently. He was a 1931 graduate of the University of Minnesota.

E. F. Campbell, 63, city paving engineer of Minneapolis, Minn., died there recently. He had been with the city engineer's department for 36 years.

John A. Hayes, 28, of Smith Grove, Ky., a civil engineer for the Kentucky highway department, died at Louisville on March 21.

Clyde G. Jones, 70, former city engineer of Jamestown, N. Y., for 16 years, died March 23. He was the son of George W. Jones, Jamestown's first city engineer. Mr. Jones engaged in private surveying and real estate field.

MAJOR MEETINGS

American Society of Civil Engineers, Biltmore Hotel, Oklahoma City, Okla., April 20-23.

American Geophysical Union, U. S. National Museum and National Academy of Sciences Auditorium, Washington, D. C., April 20-22.

American Wood Preservers' Association, Jefferson Hotel, St. Louis, Mo., April 26-28.

First International Civil Engineering Congress, Mexico City, Mexico, April 30-May 7.

American Road Builders' Assn., Southeastern States Conference, General Oglethorpe Hotel, Savannah, Ga., May 11-13.

Society for Experimental Stress Analysis, Hotel Statler, Detroit, Mich., May 19-21.

American Water Works Association, Stevens Hotel, Chicago, Ill., May 30-June 3.

ENGINEERING SCHOOLS

Research Projects

The joint highway research project, carried on at Purdue University in cooperation with the State Highway Commission of Indiana, has been operating under an annual budget of $50,000, paid to the university quarterly by the highway commission. The project is operated by the engineering experiment station under the direction of Prof. R. B. Wiley, head of the school of civil engineering and engineering mechanics, and Prof. K. B. Woods, as associate director. Recently the legislature increased the allocation from $50,000 to $150,000 this year and, in addition, the commission was authorized to pay to the university for engineering and economic investigations of projects for future construction and for highway research such additional federal funds as may be available to Indiana under federal aid. This makes it possible for the highway commission to spend as much as $300,000 per year for highway research at Purdue University.

Pioneer research on dimensional changes which may occur inside a reinforced concrete beam is under way at the University of Michigan. Ala E. Fatin, an Egyptian engineer on leave from his post as director of works for the port of Alexandria, and working on a Doctor of Science degree at the university, has perfected a way to bury electric strain gages inside a concrete beam without affecting their accuracy in recording expansion or contraction. Previous use of electric strain gages in concrete research had been limited to the recording of surface changes.

"It is known that concrete shrinks as it ages," Robert H. Sherlock, professor of civil engineering, explains. "Up to now, it has been impossible to determine the amount and distribution of the changes which occur throughout the entire mass of concrete."

Prof. Sherlock, who is supervising the research work done by Fatin, believes the information now becoming available may bring about major changes in concrete design. Or at least, he hopes that Fatin's research will remove the mystery regarding interior changes in concrete beams and thus reduce the number of carefully calculated assumptions which engineers have to make.

Fatin is using ¼-in. strain gages, flat coils of hair-like wire hooked up to electrical recording devices. He has placed these tiny strain gages on each side of a small sheet of plastic material, through which at each end of the gages he has put copper lugs. Then he has covered the gages with cocoons of rubber cement so that they are protected from moisture and side-wise pressure. The gages then may be buried inside the concrete as it is poured. Connecting wires, long enough to emerge from the concrete, are hooked up to electrical recording machines.

Better understanding and a closer relationship in engineering research among universities, industries and governmental agencies was the goal of the first symposium on engineering research held at the University of Minnesota March 14-16. Officials and research men from major industries took part in the symposium. The group is trying to find how universities can best serve industry and government, and what types of research are best suited to university work.

Wm. P. Tolley, Chancellor of Syracuse University, which has extensive research projects under way in its school of applied science, says: "Industrial progress depends on the flow of new scientific knowledge. We are going to look to universities for help in fundamental research, which today is the applied research of tomorrow. The work in pure science in our university laboratories precedes the spectacular advances that redound to the benefit of the public."

Faculty News

Harold B. Gotaas, professor of sanitary engineering, University of California, Berkeley, was recently appointed chairman of the division of civil engineering. Professor Gotaas joined the faculty in the fall of 1946 after separation from the Army, where he had been assigned to the Institute of Inter-American Affairs as chief engineer and later as president.

Harold B. Gotaas

Edward C. Creutz, 36, administrator of the Carengie Institute of Technology cyclotron project, has been appointed head of the department of physics, effective July 1. A graduate of the University of Wisconsin, Professor Creutz has been on the faculty of Princeton.

Thomas H. Evans, director of the school of civil engineering at Georgia Institute of Technology, has resigned, effective in June, to become dean of engineering at Colorado A. and M. College. He is a graduate of California Institute of Technology and was associate professor of civil engineering at the University of Virginia, an instructor at Yale, and took graduate work at Carnegie Tech and the University of Michigan. He was a colonel in the recent war.

Joseph W. Bennett has been appointed assistant professor of engineering drawing and mechanics at the University of Alabama, Tuscaloosa. He is a graduate of the University of Michigan and holds a B.S. degree in engineering and an M.S. in applied mathematics.

Kenneth F. Tupper, director of the engineering division of the Chalk River atomic energy project since 1947, and an expert on atomic energy and jet propulsion, has been appointed dean of engineering at the University of Toronto, in succession to Dean C. R. Young, retired.

Educational Notes

Charles Edison, former governor of New Jersey, John F. Kidde, president of Walter Kidde and Co.; and Edwin J. Schwanhausser, vice-president in charge of sales of the Worthington Pump and Machinery Corp., have been appointed trustees of the Stevens Institute of Technology, Hoboken, N. J.

The Society of Women Engineers at Drexel Institute of Technology, Philadelphia, sponsored a conference held there recently to consider the organization of a national or regional organization of women engineering undergraduates.

Franks Truck-Mounted Rotary Drilling Rig on Oshkosh Chassis (with dual front wheels and four-wheel drive) uses Vickers Hydraulic Power Steering for easy and SAFE STEERING.

HEAVIER FRONT-WHEEL LOADING

WITH VICKERS *Hydraulic* POWER STEERING

With ordinary steering, front-wheel loading is sharply limited by what the driver can pull and by acceptable steering gear ratios. But with Vickers Hydraulic Power Steering, the driver doesn't have to pull . . . hydraulic power does the work. Front-wheel loading can be any amount the chassis can take. No matter how much it is, the steering is effortless and safe. The Vickers Hydraulic Booster puts no load on the steering gear. The steering force reaction is absorbed by the frame . . . so front-wheel loading does not affect the steering gear. Write for Bulletin 47-30a for the many other advantages of Vickers Hydraulic Power Steering. 3822

VICKERS HYDRAULIC POWER STEERING IS *Effortless, Positive, Shockless.*

Vickers Hydraulic Steering Booster with Integral Overload Relief Valve. Bulletin 47-30a.

Vickers Balanced Vane Type Pump is Engine Driven. Bulletins 36-12 and 49-52.

VICKERS Incorporated

DIVISION OF THE SPERRY CORPORATION

1496 OAKMAN BLVD. • DETROIT 32, MICHIGAN

Application Engineering Offices:

ATLANTA • CHICAGO • CINCINNATI • CLEVELAND • DETROIT
LOS ANGELES • NEWARK • PHILADELPHIA • PITTSBURGH
ROCHESTER • ROCKFORD • ST. LOUIS • SEATTLE • TULSA
WASHINGTON • WORCESTER

ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921

Manufacturers' Publications

Suspended Ceiling Construction—A 1949 catalog on suspended ceiling construction describes several recent developments useful in installing ceilings with or without acoustical materials. These developments include a new special zipper splice lock clip which holds adjoining ends of nailing channels in a rigid position and prevents bulges or depressions in the ceiling surface. Another important improvement is the innovation of the metal end lock strip which holds adjoining sheets of backerboards securely in place. This catalog illustrates how Nailock installations for acoustical ceilings are installed in only three operations. It includes specifications and a listing of distributors.—NAILOCK STEEL DIVISION, THE SANYMETAL PRODUCTS CO., INC., 1705 URBANA ROAD, CLEVELAND 12, OHIO.

Traveler Crane and Excavator—New catalog pictorially illustrates the mobility and versatility of the Byers Traveler, Model "61W" ½ cu. yd. and Model "71W" ⅝ cu. yd. excavators and cranes. This 24-page catalog, also shows the adaptability of the rubber-tired Traveler to construction work. Using both photographs and line drawings, the more important mechanical features of the operating machinery are also described.—THE BYERS MACHINE CO., RAVENNA, OHIO.

Portable Hoists—(4-p. folder) Lists four models of 2, 4, and 6 hp. weighing from 200 to 500 lb. Hoists are designed for use of roofers, building contractors and plumbers. Contains instructions for operating hoists.—KING MFG. CORP., 3146 W. CHICAGO AVE., CHICAGO 22, ILL.

Metal Doors—Complete information for contractors and builders is found in a catalog, "Fenestra Metal Doors, Swing and Slide." It describes the new Fenestra stock hollow metal entrance door and other swing and slide doors, frames, locks and hardware, together with installation instructions and specifications.—DETROIT STEEL PRODUCTS CO., 3159 GRIFFIN ST., DETROIT 11, MICH.

Tap Drill Sizes—A chart covers American National screw thread pitches as established by the National Screw Thread Commission authorized by Congress in 1928 and subsequently approved for general use. Sizes of threads, threads per inch, outside diameter of screw, tap drill sizes, and decimal equivalent of drill are given for National Coarse Standard Threads (N.C.), formerly U.S.S.; National Fine Standard Threads (N.F.), formerly S.A.E.; and Special Threads (N.S.). Other wall charts in the South Bend series are: "Principal Parts of a Lathe", "How to Become A Machinist", and "Decimal Equivalents". Copies may be obtained by sending 10 cents in coin to SOUTH BEND LATHE WORKS, 361 EAST MADISON STREET, SOUTH BEND 22, IND.

Electric Hoists—A 6-page folder describes a new advanced design line of Wright Speedway electric hoists. It introduces the Speedway ½-ton to 10-ton electric hoists. It mentions 21 points of superiority, gives action photographs, illustrations of each type of hoist, a cross sectional view of the hoist frame and complete specifications.—WRIGHT HOIST DIVISION OF AMERICAN CHAIN & CABLE CO., YORK, PA.

Motor Starters—A line of alternating-current full voltage starters for any type of motor drive is described in a new 12-page bulletin. Construction features and uses of manual and magnetic across-the-line starters, across-the-line combination starters, reversing starters, and push-button control stations are all described and illustrated. Two types of thermal relays are used to protect Allis-Chalmers starters from overload—melting alloy relays through size 3 and spiral bimetallic on sizes 4, 5, 6, and 7.—ALLIS-CHALMERS MFG. CO., S. 70TH ST., MILWAUKEE, WIS.

Electric Plants—(20-p. booklet) Contains a model guide to assist in selection of electric plants. Also statistics on watts required by electric motors and appliances. Describes Onan electric plants in sizes ranging from 350 watts weighing 77 lb. to 35,000-watt diesel units weighing 3050 lb. Also covers special accessories.—D. W. ONAN & SONS, INC., MINNEAPOLIS 5, MINN.

Lightweight Aggregate – Circular tells about Lelite for use in structural concrete, refractory concrete and precast products. This quality lightweight aggregate is a structurally strong, chemically inert, cellular, vitreous material produced in gradations particularly adapted for use in poured structural concrete and precast structural concrete products where strength, as well as light weight, is important.—LEHIGH MATERIALS CO., LANSFORD, PA.

Double-Acting Pile Hammers—(Bulletin) Covers ten sizes of McKiernan-Terry double-acting pile hammers and two sizes of pile extractors. Contains operating instructions, revised specifications and anvils and base attachments. Also pile-driving leads and rigs for pulling piles with inverted hammers.—MCKIERNAN-TERRY CORP., 15 PARK ROW, NEW YORK 7, N. Y.

Floor Grating—(4-p. folder) Describes and illustrates function and utility of heavy duty structural expanded metal floor grating having no riveted or welded joints. Table of technical data covers style of grating, properties, standard sizes and load test data.—UNITED STATES GYPSUM CO., 300 W. ADAMS ST., CHICAGO 6, ILL.

Elections and Activities

Howard A. Stingle of Spokane has been elected president of the Washington State Society of Professional Engineers. Howard E. Schroedel of Seattle was elected vice-president, with Walter Woodward of Spokane as treasurer, Conrad O. Mannes of Seattle as national director and Grover C. Gaier of Seattle as executive secretary.

George R. Boddie is president of the Mississippi Society of Professional Engineers, L. L. Patterson will be president next year.

Chas. Cownie is president of the Iowa Good Roads Association; John W. Coverdale, vice-president; and Neal P. Hammer, temporary secretary.

Officers of the Oklahoma Society of Professional Engineers are: President, M. B. Cunningham; 1st vice-president, Allan Craig; 2nd vice-president, N. G. Fellows; secretary-treasurer, Cecil Perkins.

New officers of the Montana section, ASCE are John Morrison, president; John D. Officer first vice-president; Harold Egeberg, second vice-president, and Louis Henke, Jr., secretary-treasurer.

Robert N. Marshall has been named president of the Winston-Salem, N. C., Engineers Club, succeeding Charles F. Vance. Other officers are: Harry F. Day, vice-president; Thomas F. Karnes, treasurer; and Ken L. Wommack, secretary.

Harry F. Day, vice-president; Thomas F. Karnes, treasurer; and Ken L. Wommack, secretary.

H. E. Glenn has been elected president of the South Carolina section of the ASCE. A. T. Brown, was elected vice-president, and A. E. Johnson, secretary-treasurer.

H. Clay Moore has been elected president of the Georgia Engineering Society, succeeding George H. Bond, Burton J. Bell, first vice-president; Van Porter Enloe, second vice-president; George M. Normandy, secretary, and John L. Underwood, treasurer.

Charles Zimmerman was elected president of the Allied Construction Industries of Delaware, James Cullen, Sr., vice-president, and Arthur A. Carota treasurer. Francis E. B. McCann was re-elected executive vice-president.

The Arizona Society of Registered Professional Engineers has been organized at Phoenix with 80 charter members. Officers are: Walter H. Croft, president; William D. Williams, vice-president; Roger I. C. Manning, secretary-treasurer; Harold W. Yost, director at large, and Charles F. Willis, national director.

Russell F. Lewis, Rochester, was elected president of the N. Y. State Association of Highway Engineers. Other officers: M. Merrell Bailey, Hornell, vice-president; Edward F. McDonough, Albany, treasurer, and Milton H. Bingham, Albany, secretary.

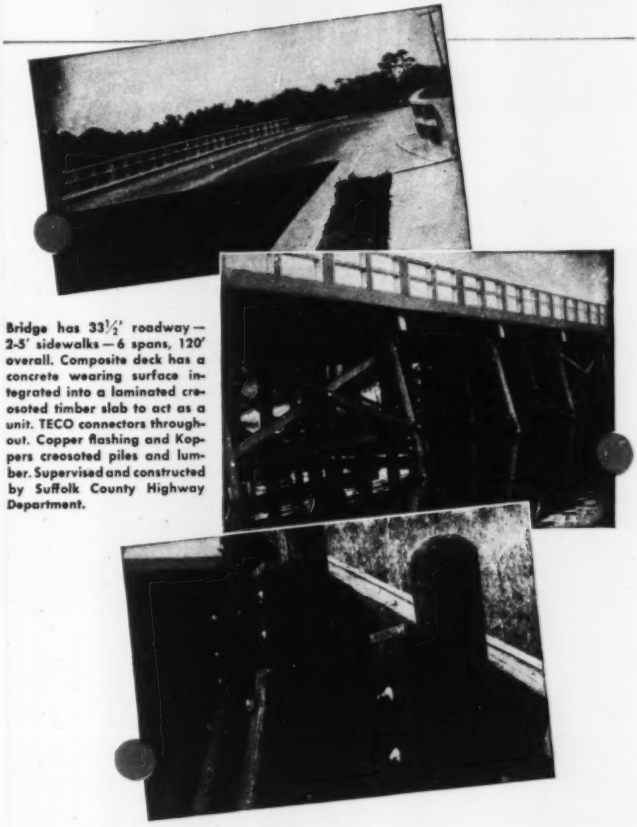
The southern Californa chapter, Associated General Contractors of America, has elected six new directors to serve for three years. They are R. A. Smith and H. M. Baruch, as representatives of the Building Division; Ben Griffith, Highway Division; Robert V. Edwards, and Tom Polich, Engineering Division; and R. A. Wattson, R. A. Wattson Co., Utilities Division.

J. D. MacPherson, Montreal, has been elected Chairman of the Junior Section, Engineering Institute of Canada.

Officers of the Associated Pennsylvania Constructors are: Donald B. Stabler, president; Wm. O. Taylor, vice-president; and H. R. Imbt, treasurer.

Prof. M. L. Baker, of the Nova Scotia Technical College has been elected president of the Halifax branch of the Engineering Institute of Canada, succeeding W. C. Risley.

THE "SUPPORTING" ROLE THAT'S STEALING THE SHOW



Bridge has 33½' roadway—2-5' sidewalks—6 spans, 120' overall. Composite deck has a concrete wearing surface integrated into a laminated creosoted timber slab to act as a unit. TECO connectors throughout. Copper flashing and Koppers creosoted piles and lumber. Supervised and constructed by Suffolk County Highway Department.

● Along with the nation's steadily increasing amount of transportation comes ever-increasing praise for Koppers Pressure-Creosoting.

Its performance on piles, decks, posts, and guard rails has led highway engineers across the nation to report that "Koppers Pressure-Creosoting does the job."

By "doing the job" they mean stretching construction budgets. Slashing maintenance costs. Making structural changes easy. Permitting re-use of valuable, expensive members. Providing strength and durability under impact. And its resistance to decay has been proved by performance; many pressure-creosoted bridges, for example, have been in service over a third of a century.

Yes, *Koppers Pressure-Creosoting does the job*—does it *dependably . . . economically . . . permanently.*

KOPPERS PRESSURE-TREATED WOOD

KOPPERS COMPANY, INC., Pittsburgh 19, Pa.

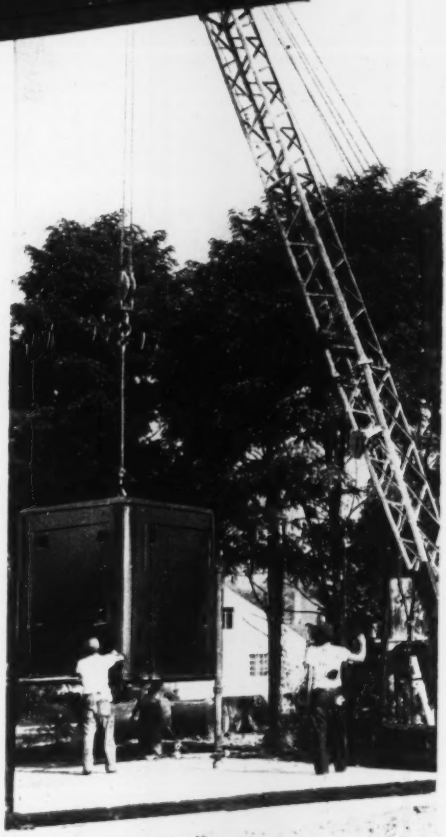
For EXTRA performance... Roebling Preformed

Costs least—because it lasts longest

"THERE'S THE ROPE for my money," says a contractor speaking of Roebling Preformed "Blue Center" Steel Wire Rope. And *his* first choice is the first choice of more and more construction men everywhere. Preformed "Blue Center" has the dollar-saving characteristic of setting new performance records. It brings fewer shut-downs; cuts your replacement time. Even severe bending, small sheaves and reverse bends find it fatigue-resistant and going strong after ordinary ropes have failed.

EASIER AND FASTER TO HANDLE. Besides these advantages, Roebling Preformed has almost no tendency to set or kink...and that makes it easier to handle and install. It saves still more time because you can cut it without seizing, and apply fittings readily. In operation, Preformed is superior, too . . . practically free from vibration and whipping.

FREE ENGINEERING SERVICE. Have your Roebling Distributor help you select the *right* wire rope for longest service and lowest cost. If you come up against any special problems in choosing, installing or maintaining wire rope, your Distributor will be glad to get the help of a Roebling Engineer. John A. Roebling's Sons Company, Trenton 2, New Jersey.



WRITE OR CALL THE ROEBLING FIELD MAN AT YOUR NEAREST ROEBLING OFFICE AND WAREHOUSE

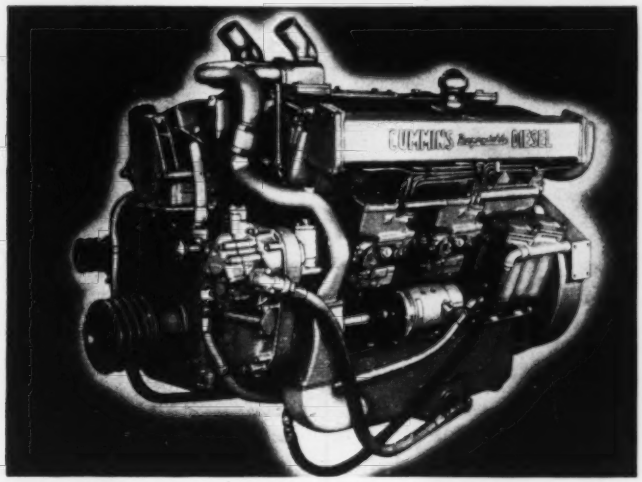
Atlanta, 934 Avon Ave. ★ *Boston*, 51 Sleeper St. ★ *Chicago*, 5525 W. Roosevelt Rd. ★ *Cleveland*, 701 St. Clair Ave., N. E. ★ *Denver*, 1635 17th St. ★ *Houston*, 6216 Navigation Blvd. ★ *Los Angeles*, 216 S. Alameda St. ★ *New York*, 19 Rector St. ★ *Philadelphia*, 12 S. 12th St. ★ *Pittsburgh*, 855 W. North Ave. ★ *Portland, Ore.*, 1032 N. W. 14th Ave. ★ *San Francisco*, 1740 17th St. ★ *Seattle*, 900 First Ave.

ROEBLING

ROEBLING

A CENTURY OF CONFIDENCE

NEW PRODUCTS



High-Speed Diesel for Big Rigs Unveiled by Cummins Engine Co.

A new high-speed diesel engine was unveiled March 17 by Cummins Engine Co., Inc., at a press preview at the Columbus, Ind., plant attended by 45 representatives of business and trade papers, newspapers and wire services. The engine, made in two series, is a 12-cyl. 4-cycle V-type operating at 2,100 rpm. The NVHS model, equipped with a Roots type gear-driven supercharger, develops 550 hp., and weighs only 4,550 lb., or 8.3 lb. per hp., rated as the most powerful high-speed diesel yet built. Identical except for lack of supercharger, the NVH model develops 400 hp., and weighs 4,300 lb., or 10.8 lb. per hp.

Two banks of six cylinders each are set at a 40-deg angle in a common engine block of high-strength alloy iron. Separate cam shafts and fuel pumps serve each bank. Cylinders, fitted with removable liners, are staggered in each bank to permit regular piston rods being mounted side by side on the crank pins. Crank shaft bearings, both main and rods, are interchangeable. The 12 cylinders of 5¼ in. bore and 6-in. stroke displace 1,486 cu.in.

Cummins has had the engine under actual field tests for some time in big shovels, trucks and switching locomotives. It is designed for heavy construction, mining, logging and petroleum equipment, for large trucks, industrial locomotives, rail cars and stationary installations. Marine models will be available later.

After the unveiling ceremonies the guests were taken on a tour through the plant. They were greatly impressed by the precision operations, testing and quality control and by the fact that every engine is torn down for inspection after a test run.—CUMMINS ENGINE CO. INC., COLUMBUS, IND.

Building Paper

A new development in building paper is a roll 10 ft. wide, 100 ft. long, and weighing 60 lb. Made out of an unbroken sheet 10 ft. wide, the "Skufpruf Ten" eliminates the expense of lapping narrow rolls together. Other features are its light weight, ease in handling and storage. A piece easily cut off the roll makes a strong, waterproof, scuffproof, shrink-resistant tarp. The roll is also economical for concrete curing jobs, since it covers 40% more area in the same operation than a 7-ft. wide roll.—THE RICHKRAFT CO., BUILDERS BLDG., CHICAGO 1, ILL.

Concrete Saw

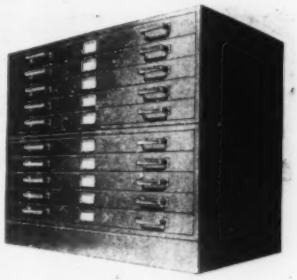
The advantages of Concut, Jr., include portability, readiness for immediate use, elimination of lengthy preparation, one-man operation. It reduces to one-half pneumatic hammering and hand chiseling, and insures a good clean cut. — CONCRETE SAWING EQUIPMENT, INC., 265 NORTH VINEDO AVE., PASADENA 8, CALIF.

Roadmix Machine

Self-propelled Roadmixer has been added to Wood line to meet demand for larger traveling mixing plant. Machine known as Model 42 has 100-hp. power unit, tandem drive and five working speeds ranging from 9.2 to 55 ft. per min.; road speeds range from 1½ to 11 h.p.h. Machine will mix in one pass all types of aggregates or soil with any type of liquid binder or stabilizing material used in the construction of mixed-in-place pavements or base courses. Features include larger mixing drum, increased production, hydraulic controls, and metered control of liquid binders. This machine replaces tractor-drawn Model 48 which was taken out of production recently.—WOOD MFG. CO., 6900 TUJUNGA AVE., NORTH HOLLYWOOD, CALIF.

Safe Ladder Stage

Designed for use with an ordinary extension ladder, the "safety" ladder stage provides a safe working area or scaffolding unit of 26x24 in. for all above-ground operations where ladders can be used. Its frame is of structural aluminum alloy. Footboards are of seasoned waterproof wood.—JUNIATA CO., PARK BLDG., PITTSBURGH 22, PA.



Blueprint Cabinet

A new blueprint cabinet, solidly built of heavy gauge furniture steel, features smooth gliding drawers on ball-bearing rollers, and is equipped with a lift compressor in the front of the drawer and a hood in the rear to prevent the material filed from curling, creasing or tearing. Two sizes are available—one with inside drawer dimensions, 37 in. wide, 25 in. deep and 2¼ in. high; and the larger one with inside drawer dimensions, 43 in. wide, 32 in. deep and 2¼ in. high.—COLE STEEL EQUIPMENT CO., INC., 285 MADISON AVE., NEW YORK 17, N. Y.

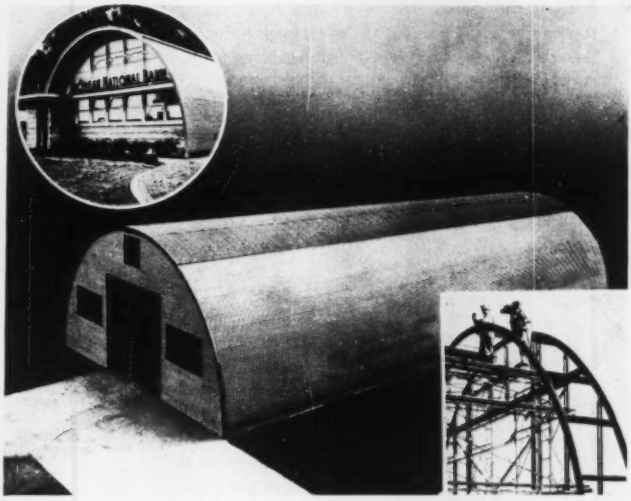
(*Continued on page 46*)

with
TECO RAFTERS and
Trip-L-Grip
Anchors

Here we are again with a money saving design for buildings in spans of 34' to 50'. Send us this ad for your FREE copy of Teco Design #597 — Less Material—Easy to Build—Less Labor. Write for free literature on Trip-L-Grip framing anchors — the new connector for secondary wood connections. Prompt shipment Teco Split rings, shear plates, toothed rings, grids and anchors. Distributors and fabricators in principal cities.

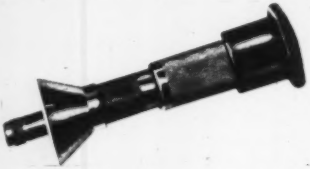
TIMBER ENGINEERING COMPANY
WASHINGTON
CHICAGO NEW ORLEANS

"See the
BAY CITY LINE
IN '49"
SHOVELS
CRANES
DRAGLINES
HOES
READ THE FULL STORY ON PAGE 8 LAST ISSUE
BAY CITY
BAY CITY SHOVELS, INC., BAY CITY, MICH.



New Quonset Building Design

Improvements in Quonset building design provide faster erection, greater strength and smarter appearance. The new Quonset provides a permanent, economical structure that meets building code requirements. Compared with last year's model, it contains fewer but sturdier parts in the framework. This makes possible savings in erection time with reduction in total cost for industrial, commercial or public-assembly buildings. The new design in size of 40 x 100 ft. can be erected in 25 percent less time than required for the 1948 design. Frame construction is simplified by a new type of supporting member, termed bridging, between ribs. It consists of quickly-installed channel sections connecting adjoining ribs horizontally, like a ladder's rungs. Their function formerly was served by a far more intricate, web-like system of lighter members installed in the manner of an X between ribs. Greater structural efficiency—and roof line—for the Quonset 40 results from a change in manner of applying corrugated steel sheets to the framework of Stran-Steel members. These have a groove into which nails can be driven. Side sheets with corrugations horizontal, rather than vertical, are nailed to purlins extending 2 in. above ribs. The roof thus is clearly defined, simplifying architectural styling of the basic structure to meet specific building requirements.—GREAT LAKES STEEL CORP., STRAN-STEEL DIVISION, PENOBSCOTT BLDG., DETROIT 26, MICH.



Fastening System

This system includes not only a fastening tool but also a line of steel fasteners and powder charges. The tool is actuated by a powdered charge which, upon being exploded within the tool, forces the steel studs or pins into steel, concrete, masonry and other hard materials, replacing the conventional drilling or plugging method. It is applicable to a wide variety of fastening work in new building construction and in industrial maintenance work, for the installation of electric equipment, conduits, automatic sprinklers, lighting, piping, heating, air conditioning, plastering, flooring, siding and roofing.—STEMCO CORP., ROCKY RIVER, CLEVELAND 16, OHIO.

Plastic Putty

A new all-purpose plastic putty which can be used for sealing, glazing and packing and made by a formula especially adapted for a dry climate, is being manufactured. Known commercially as "Nu-Era", it expands and contracts with weather conditions, is weatherproof, waterproof, and fireproof. It will not crack, crumble or dry and fall out and will remain in its original state indefinitely, according to the manufacturers. — AMERICAN LABORATORIES, NORTH HOLLYWOOD, CALIF.

4 important advantages

- Better wetting or coating of aggregate
- Greater stickiness and binding quality
- Faster setting of roads
- Blacker appearance

Now, you can build longer-lasting secondary roads in less time and at lower cost! Roads laid with the improved Standard Road Oils will wear longer because the aggregate is bound tightly into the road surface. Faster setting will mean less traffic delay. You'll do the job in less time.

Ask a Standard Oil Asphalt Representative for all the facts about these improved road oils. Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

STANDARD OIL COMPANY (INDIANA)

STANDARD

A NEW HIGH IN HEALTH

BOB GUNTHORP *Photo*

GEORGE P. TURNER, *Architect* DANIEL CONSTRUCTION CO., *Contractor*

In construction products **CECO ENGINEERING**

A NEW LOW IN COST

WITH CECO CONCRETE JOIST CONSTRUCTION

Here is Alabama's new Public Health Building, the first in the United States to be completed under the Hill-Burton Hospital and Health Center Act and the United States Public Health service.

Here, too, as in other buildings where strength and durability are not to be sacrificed, Ceco concrete joist construction plays an important role. The result is a rigid, strong, soundproof building—fire resistive. Yet, actual construction costs were low!

Yes, concrete joist construction costs are low, because the use of Meyer steelforms reduces the amount of concrete needed for any span or live load. And since Meyer steelforms can be moved from job to job—floor to floor—they can be used time and time again for just a nominal rental charge. Construction is speeded up . . . costs are driven down.

CECO FIRST IN THE FIELD . . .

Ceco originated the removable steelform method of concrete joist construction. The company is first in the field—actually providing more service than all competitors combined. So, for concrete joist construction, call on Ceco—the leader over all.

CECO STEEL PRODUCTS CORPORATION

GENERAL OFFICES: 5601 West 26th Street, Chicago 50, Illinois

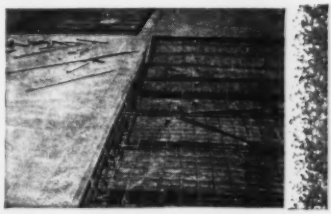
Offices, warehouses and fabricating plants in principal cities

CECO STEEL ®

makes the big difference

Here is illustrated Meyer steelforms completely erected on open wood centering, ready for placement of reinforcing steel and concrete.

In this photograph, the reinforcing bars are installed as detailed by Ceco, in proper relation to the erected steelforms to provide a rigid construction.

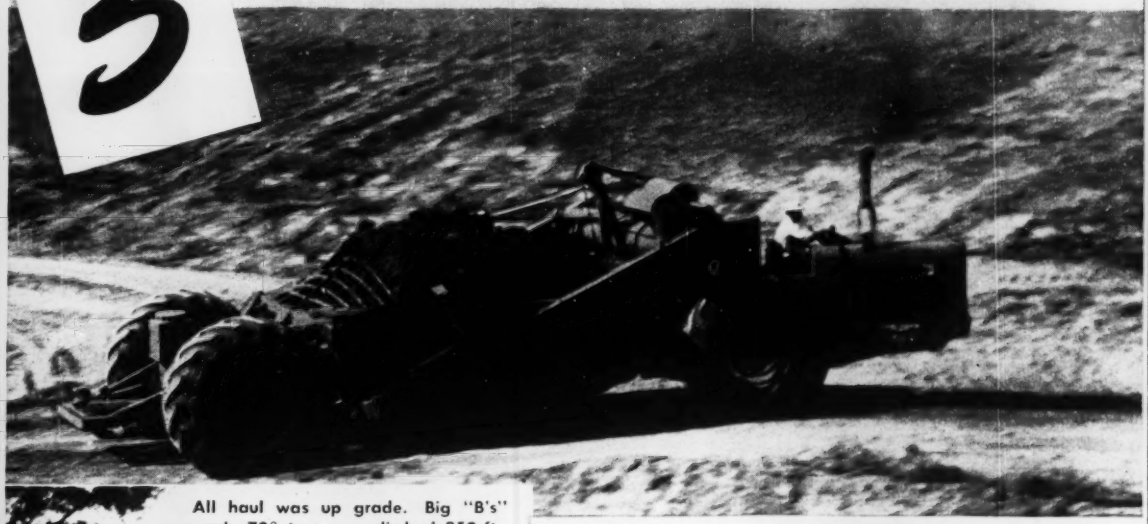


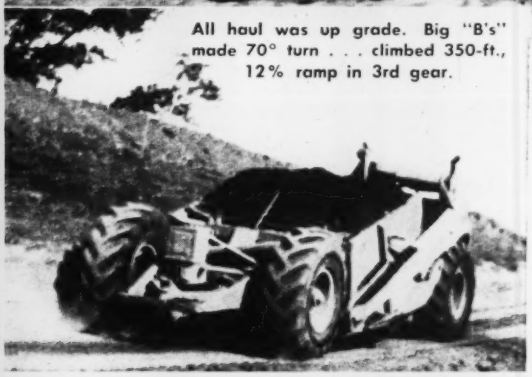
Above the welded wire fabric has been placed in correct position and the pouring of concrete for the reinforced joists and top slab has commenced.

Partial List of Ceco Products

METAL RESIDENCE CASEMENTS • INDUSTRIAL WINDOWS AND DOORS • METAL FRAME SCREENS ALUMINUM FRAME STORM WINDOWS • ALUMINUM COMBINATION STORM WINDOW AND SCREEN UNITS • METAL LATH AND ACCESSORIES • STEELFORMS • REINFORCING BARS • STEEL JOISTS AND ROOF DECK • HIGHWAY PRODUCTS

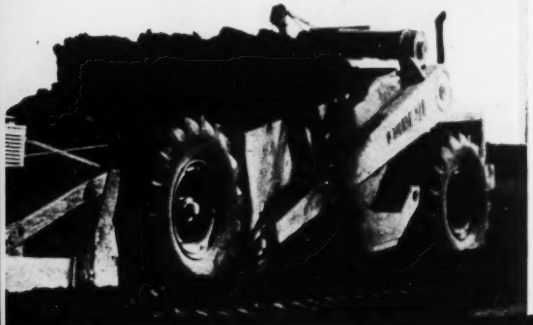
3 "B" TOURNAPULLS





All haul was up grade. Big "B's" made 70° turn . . . climbed 350-ft., 12% ramp in 3rd gear.

Average load . . . 22 pay yards of broken river-bottom silt and hardpan.



HAULED 77,000 CU. YDS. UP 10 to 12% GRADES

On a rush schedule to raise height of Marysville, California levee, H. Earl Parker, prominent West Coast contractor, moved 80% of the 90,000 total yardage with a fleet of 3 big electric-control B Tournapulls. Loading and hauling conditions were extremely tough all the way.

Loaded silt, gravel, hardpan

The borrow material, a heavy, fine-grained silt of the river-bottom borrow pit was interlaced with tough layers of packed gravel and hardpan and had to be rooted. This made the silt hard to load, since it came up in loose, granular fragments that rolled. Yet, the extra-capacity Tournapulls consistently loaded 27½ loose yards (22 pay) each trip.

Every yard hauled up grade

As the big "B's" left the borrow pit, they hauled across a narrow culvert . . . made a 70° turn onto

Send for "B" bulletin to: **R. G. LeTOURNEAU, Inc., Peoria, Illinois**

NAME ..... TITLE .....
COMPANY .....
STREET .....
CITY ..... STATE .....
Would also like ☐ price . . . ☐ delivery information . . . ☐ production estimate on present operation

handle 80% of Marysville levee

Electric-controlled, positive power steer let operators make 90° turns off 20-ft. levee top and spread down 2½-to-1 slopes with complete safety.

a 350-ft. ramp leading to levee top. In spite of sharp approach angle, Tournapulls rolled fully loaded up the 10 to 12% grade in 3rd gear . . . hauled and spread along the crest. Part of the time Parker's Tournapulls were routed off the 20-foot-wide levee top, making 90° turn and spreading down the soft, 2½-to-1 side slopes. Hauls varied from 500 to 2500 ft. one way.

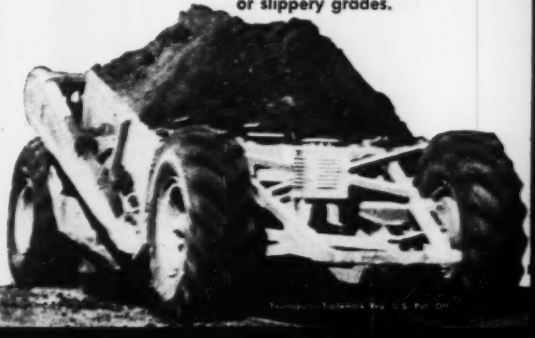
Averaged 1368 pay yds. per 9-hr. shift on 4350′ cycles

On one 4350-ft. cycle, Parker's 3 electric-control Tournapulls delivered a total 152 pay yards per hour per machine . . . averaged 1368 pay yards per 9-hour shift per machine.

During stretches of wet weather, when all other earthmoving equipment had to shut down, the powerful 240 h.p. "B's", with their giant tires and power-proportioning differential, hauled load after load to the levee top . . . worked straight through two 9-hour shifts a day . . . kept the job on schedule.

For more yards per day *at lowest net cost* on your work, check into 16 mph, 35-ton-capacity B Tournapulls. These big, rubber-tired, extra-capacity dirtmovers haul *twice* the usual scraper pay load every trip . . . *double* your dirtmoving output per man-hour . . . cut operating and maintenance costs. Write . . . or call your LeTourneau Distributor for job-proved facts and figures TODAY.

Giant 24.00 x 29 tires on the big "B" have tapered beads for lower pressures, more ground contact. Eliminates rim slippage . . . helps rig ride over soft spots . . . travel safely over sticky or slippery grades.



LETOURNEAU PEORIA, ILLINOIS EXTRA-CAPACITY TOURNAPULLS

MORE YARDS PER HOUR WITH RUBBER-TIRED POWER

NOW A NEW BANTAM

Illustrating the New BANTAM Trench Hoe with heavy duty 14' boom. New cast steel head permits larger, stronger axle and bushings to compensate for twisting strain.

NORMAL CAPACITY PER HOUR
Shovel or Dragline — 60 yards
Trench Hoe — 100 feet of five foot ditch
CRANE CAPACITY — 5 TONS

advanced engineering features for better performance, longer life, more profits for users

The new Model M-49 Schield BANTAM now combines many more big machine features with the basic design which has made it the outstanding machine of its type. Jack, drum, and swing shaft assemblies are now mounted on heavier Timken tapered roller bearings. Drums, swing gears, and vertical swing shaft roll on sealed-for-life pre-lubricated ball bearings.

A new *triple* roller chain drive is sealed in and runs in a constant bath of oil. All gears and pinions throughout the BANTAM are machine cut, and parts subject to extreme wear are flame hardened. The swing shaft is equipped with the same type internal expanding clutch that has proved so efficient on the drum shaft.

That's not all! Now three larger adjustable cam-type hook rollers carry load, reducing wear and maintenance costs. Turntable rollers are re-designed with larger axles and longer bushings cutting bearing pressure by 50%. Machine cut bull gear is jig drilled and bolted in place for rotation if necessary to distribute wear.

And here's an outstanding feature never before offered. The new BANTAM is furnished with an independent spur gear drive boom hoist of patented design. Boom may be powered up or down or lowered on brake for fast operation making the BANTAM adaptable to more jobs than ever before.

You'll like the new cab design which gives greater visibility and more convenience in servicing. Climb in and put your feet and hands on the new simplified controls. You'll agree the new BANTAM is the sweetest machine of its kind you've ever handled. Write for complete details.

THE SCHIELD BANTAM CO., INC.
201 PARK STREET • WAVERLY, IOWA

Sold and serviced by leading construction machinery distributors throughout the United States, Canada, and Foreign Countries

THE 1/3 YARD SCHIELD BANTAM

TRUCK MOUNTED TRENCH HOE • SHOVEL • CLAM • DRAGLINE • PILEDRIVER • CRANE

MATERIALS AND LABOR PRICES

Market quotations on construction materials and wage rates reported monthly by ENR correspondents

May Materials and Labor Prices will appear in the May 5, 1949 issue

CEMENT, AGGREGATE, READY-MIXED CONCRETE—F. O. B. CITY

	PORTLAND CEMENT* Per bbl. C/L lots incl. $1.00 per bbl. for bags, cash, dis. not deducted			SAND AND GRAVEL Per ton, carload lots			CRUSHED STONE Per ton, carload lots		CRUSHED SLAG Per ton, carload lots, f.o.b. plant		CONCRETE BLOCK 8x8x16-in.; truckload del.; per block	READY MIXED 1:2:4, over.
	Cloth	Paper	Bulk	Gravel, 1½ in.	Gravel, ¾ in.	Sand	1½ in.	¾ in.	1½ in.	¾ in.	Sand grav.	Lt. wgt. Agg. 50 c.y., del.
Atlanta	$4.11	$3.36	$3.05	$2.00	$2.00	$1.75	$2.10	$2.10	$1.65	$1.85	$0.1725	$0.1725	$11.00
Baltimore	4.12	3.37	3.06	2.30*ft*	2.30*ft*	1.95*ft*	2.60*ft*	2.70*ft*	2.45*ft*	2.45*ft*	.16	.16*w*	9.85
Birmingham	3.80	3.05	....	2.06	2.06	1.66	2.50	2.50	1.00	1.20	.165	.165	7.75
Boston	4.50	3.75	3.44	2.50*t*	2.50*t*	2.50*t*	1.60*t*	1.70*t*	....*s*	....	.17	.185*w*	10.50*m*
Chicago	3.61/3.67	2.86/2.92	2.56/2.62	2.75‡*d*	2.75‡*d*	3.20‡*d*	2.75‡*d*	2.75‡*d*	2.00‡	2.00‡	.20	.20*x*	....
Cincinnati	4.13	3.38	3.07	1.85‡*pp*	1.85‡*pp*	1.75‡*pp*	2.95‡*bb*	2.95‡*bb*	2.30	2.30	.19	.225	10.60*kk*
Cleveland	3.92	3.17	2.87	1.90*llq*	1.65*llj*	1.55*ll*	3.55‡*h*	3.55‡*h*	2.75	2.75	....	.21	11.80*aa*
Dallas	3.57	2.82	2.52	2.00	2.15	1.75	2.10	2.05	....	....	.089*p*	.250	9.30
Denver	.....	3.59	3.29	1.85	2.00	1.15	....	....	....	....	.20	.23*w*	9.65
Detroit	4.03	3.25	2.97	3.25‡	3.25‡	3.00‡	3.00‡	3.00‡	3.00‡	3.00‡	.17	.18*w*	9.60*kk*
Kansas City	3.91	3.16	2.99	1.95	1.95	1.55	1.45*a*	1.45*a*	....	....	.17*wf*	.215*ay*	10.40*n*
Los Angeles	....	3.82*b*	3.42*b*	1.92*t*	2.02*t*	1.72*mn*	1.92*t*	1.92*t*	....	....	.122*oo*	....	10.28*m*
Minneapolis	4.09*dd*	3.34*dd*	3.03*dd*	2.30A‡*j*	2.30A‡*j*	1.35A‡*j*	2.50A‡*j*	2.50A‡*j*	....	....	.21*ccc*	....	10.70*jkll*
Montreal	.....	2.39*rqq*	2.24*rqq*	1.25*bbs*	1.75*bbs*	....	1.35*cs*	1.60*cs*	....	....	.247*0rr*	.177*0crr*	8.95*ls*
New Orleans	....	3.07	2.75	2.32	2.32	1.82	....	....	1.05	1.25	23	....	10.65
New York	.....	4.10/4.30‡	....	2.00*de*	2.00*de*	1.45*de*	2.25*ds*	2.25*ds*	....	....	18*ii*	.18*uccii*	10.30‡
Philadelphia	4.20‡	3.45‡	3.14‡	2.30‡	2.40‡	2.05‡	1.90‡	1.95‡	1.50	1.50	18/.22	....	9.85
Pittsburgh	4.15†	3.43†	3.10†	2.05‡	2.05‡	3.00‡	2.50‡	2.50‡	2.05	2.05	23*a*	23*x*	11.50
St. Louis	3.80*o*	3.05*o*	2.75*o*	2.40‡*oh*	2.40‡*oh*	2.00/2.40‡*oh*	1.60*c*	1.60*c*	1.70	1.15	21*h*	.24*yo*	10.40
San Francisco	.....	3.38	2.98	1.84	1.84	1.94	1.94	....	....	....	....	.25*y*	10.75*u*
Seattle	....	3.45*mm*	2.95*mm*	2.75‡*od*	2.75‡*od*	2.75‡*od*	3.50‡*od*	3.50‡*od*	....	....	.22*as*	.3135	9.75*o*

‡ Delivered. *a* F.o.b. truck at plant. *b* 10c. per bbl. off for payment by 10th of following month. *c* F.o.b. quarry. *d* Per cu. yd. *e* Barge lots alongside docks, Man. *f* F.o.b. truck on job. *g* Pea gravel. *h* Truck Lots. *i* ¼ in. *j* 5% discount for cash. *k* 5 cu. yds. or over, del. Man. *l* 2000 lb. concrete. *m* 50c. off for cash. *n* 25 c.y. or more. *o* 2% off for cash. *p* 5½ x 8 x 12 in. *r* 10¢ per bbl. off cash 20 days. *s* Sales tax included. *t* Truck delivery. *u* 10 to 100 c.y., brackets. *v* F.o.b. scow, Hudson River, N. Y. *w* Cinder. *x* Waylite. *y* Haydite. *z* Celocrete. *aa* Aver. haul, 7-9 mi., zone. *bb* Under 5 tons. *cc* 8 x 8 x 18 in., also. *dd* Dealers sell only in LCL. This is price for CL and does not include dealer's commission. *ee* 20c refund for each returnable bar. *ff* LCL. *gg* 10c. refund for each returnable bag. *hh* Truck loads up to 500 c.y. Over 500 c.y. lots, 50¢ less per yd. *ii* Yard price. *kk* 2500 lb. compression strength. *jj* 30¢ refund for each returnable bag. *ll* Price at plant, called for. *mm* 10¢ per bbl. off cash 10 days. *nn* Concrete sand. *oo* 8 x 4 x 16 std. wgt. *pp* 5 tons or more. *qq* Dealer's commission not included. *rr* F.o.b. * Prices include dealer's commission except where indicated to the contrary. † Prices not stable. *ss* 1% off for cash. *tt* Heating charge of 40¢ goes off on April 15.

CASH DISCOUNTS CEMENT to Contractors: truck delivery, 2% for cash on 10th of month; on carload deliveries, no trucking, same as dealer cash discount 10c. per bbl. for payment within 15 days of date of invoice. Subject discount 10c. per bbl. 20 days in Montreal.

CURRENT MAXIMUM PRICES AT CEMENT MILLS

Charge for bags not included. For cloth bags, add $1.05 per bbl.; 25c refund allowed for each returnable bag; for paper bags add 30¢ per bbl., not refundable.

	Bulk		Bulk		Bulk		Bulk		Bulk
Richard City, Tenn.	$2.40†	Buffington, Ind	$2.20	Steelton, Minn	$2.40	Muskegon, Mich	$2.40†	Toledo, O	$2.40†
Clinchfield, Ga	2.40†	Independence, Kan	2.30	Leeds, Ala	2.25	Saginaw, Mich	2.35†	Milwaukee, Wis	2.40†
Kingsport, Tenn	2.40†	Hannibal, Mo	2.35	Duluth, Minn	2.40	Wyandotte, Mich	2.30†	Green Bay, Wis	2.40†
West Des Moines, Iowa	2.30†	Northampton, Pa	2.30	Hudson, N. Y	2.30	Buffalo, N. Y	2.40†	Ironton, O	2.30
Nazareth, Pa	2.30†	Universal, Pa	2.30	Alpena, Mich	2.25†	Oswego, N. Y	2.40†	Montreal City	2.08
Bath, Pa	2.30†	Waco, Tex (+ 9¢ tax)	2.20	Detroit, Mich	2.40†	Cleveland, O	2.40†	W. Winfield, Pa	2.30†

† *Prices to hold for second quarter of 1949.*

PAVING BRICK, BLOCK, ASPHALT, ROAD OILS—F. O. B. CITY

	PAVING BRICK AND BLOCK			PAVING ASPHALT Per ton, less than 80 penetration		ASPHALT BINDERS—FLUXES Per gal., 80-300 penetration		CUTBACK ASPHALT Per ton		ROAD OIL Per gal.	ASPHALT EMULSION (Quick-breaking) Per gal.	
	Granite per M lots of 50,000 4x4x8 in.	Brick per M 3x4x8½ in. carload lots	Wood per sq. yd. 3½ in. 16-lb. treat	Tank car	Drums	Tank car	Drums	Tank car	Drums	Tank car	Tank car	Drums
Atlanta	$73.00	$35.00	$2.25	....	....	....	....	....	....	....	....	....
Baltimore	150.00‡	52.70‡	.....	$23.00	.....	$.095	$0.15	$.095A	$.17A	$.095*ahh*	$.095	$0.115
Birmingham	.....	32.50	.....	....	....	....	....	....	....	....	....	....
Boston	.....	.....	.....	24.50*a*	$35.50*a*	.1036*a*	.185*a*	.115A*a*	.205A*a*	10*a*	.113*a*	.205*a*
Chicago	150.00‡*y*	85.00/88.00*e*‡	3.10/4.15*dd*‡	22.50*b*	32.00*b*	21.50*bg*	31.00*bg*	.097/.108A	.....	.082/.0845*b*	.1025/.1075*b*	.15/.1675*b*
Cincinnati	.....	.....	.....	24.50*ff*	.....	.1035	.....	.1035A	.....	.....	.....	.....
Cleveland	189.00	49.00*t*	3.70*u*	30.00	40.00	29.50*g*	39.50*g*	.135A	.22A	.13	.135	.27
Dallas	*l*	40.00	*l*	23.95	42.99	.1012	.1898	26.99	47.77	.0987	.1062	.1423
Denver	.....	43.00	.....	....	....	.....	.....	.....	.....	.....	.....	.....
Detroit	....	.....	.....	28.45	35.45	.....	.....	.1188A	....	.....	.....	.1975
Kansas City	.....	40.00*q*	.....	20.45*rqq*	....	....	.....	.081*hr*	.....	.071*r*	.....	.....
Los Angeles	*l*	.....	*l*	17.60*mf*	33.10*mfw*	17.60*ym*	33.10*mw*	19.10*m*	26.10*mw*	17.60*ym*	.0825*cc*	.1625*cc*
Minneapolis	.....	.....	2.79*d*	27.00	37.00	23.00*g*	34.00*g*	27.00	37.00	.105	.13	.23
Montreal	137.00	.....	.....	25.00*k*	34.65*k*	15.80*kp*	20.05*kp*	15.70*kp*	17.70*kp*	14.20*kf*	.174*h*	.215*h*
New Orleans	.....	.....	.....	20.00*a*	.....*s*	20.00*qs*	.....*s*	.095A*add*	....*s*	.095	.0975	.18*m*
New York	.....	.....	2.50*d*	26.50	38.86*	25.50*g*	44.88*g**	.1090A	.1917A*	.1040	.1090	.1897*
Philadelphia	150.00	80.00/90.00	4.06	23.00	.....	22.00*g*	.....	.095A	.....	.....	.....	.....
Pittsburgh	165.00	42.00	4.50	26.00	39.00	.12	.24	27.00	40.00	.095	.10	.21
St. Louis	.....	.....	.....	21.65*tt*	.....	.....	.....	.....	.....	.....	.1081	.1075
San Francisco	.....	57.75*c*	.....	18.10*ee*	32.60*cee*	18.10*geff*	.....	20.10*ee*	.....	.....	.0825	.1625
Seattle	.....	.....	.....	18.10*s*	38.60*s*	17.60*sg*	.....	20.10*s*	24.10*ass*	18.60*sg*	.0775*s*	.0925*s*

‡ Delivered. *a* F.o.b. Baton Rouge. *b* F.o.b. refinery. *c* 2½ x 8½ x 4 in. *d* 2-in. interior block, 6-lb. treatment. *e* 3½ x 4 x 8½. *f* 40-80 penetration. *g* Per ton. *h* Per gallon. *i* F.o.b. Martinez. *j* Shipped in drums, per drum. *k* Tax included. *l* Not used. *m* F.o.b. refinery El Segundo. *n* 55 gal. drums. *o* Price at plant, in Everett. *p* Per 100 gal. *q* F.o.b. Buffalo. *r* F.o.b. Sugar Creek, Mo. *s* Drums not available. *t* Truck deliveries in Greater Cleveland. *u* 3-in. *v* Bulk, refinery. *w* Shipped in steel barrels, no longer in double head wood barrels. *x* Truck deliveries in Detroit $75.00. *y* Carload lots. *aa* In customer's drums. *cc* F.o.b. refinery, Inglewood. *dd* Medium curing. Rapid curing, $.0975; slow curing, $.0925. *ee* F.o.b, Richmond. *ff* 50-300 penetration. *gg* Less than 100 penetration. *hh* Asphalt. * Use of reconditioned drums. *ii* F.o.b. Wood River or Roxana, Ill.

You can get delivery

CAST IRON PIPE

sooner than you think

Cast iron pipe is more readily available today than a year ago. You can get it sooner than you think. And here's why.

The cast iron pipe industry, in spite of raw material shortages, achieved in 1946, 1947 and 1948, the greatest three-year production program in its history. Those were the years of urgent demand for cast iron pipe created, to a large extent, by construction to meet a national housing emergency.

For 1949, the increased rate of production is expected to continue and therefore:

You can get cast iron pipe sooner than you think!

Cast Iron Pipe Research Association, Thomas F. Wolfe, Engineer, 122 South Michigan Avenue, Chicago 3, Illinois.

96% OF ALL 6-INCH AND LARGER CAST IRON WATER MAINS EVER LAID IN 25 REPRESENTATIVE CITIES ARE STILL IN SERVICE.

SERVES FOR CENTURIES

IRON AND STEEL PRODUCTS—PER 100 LBS. BASE MILL PRICES

	STRUCT. SHAPES—PLATE	REINF. BARS[a][b]	RIVETS ½-in. structural	SHEET PILING	STEEL RAILS Per Net Ton: Standard	Light[c]	Re-rolled	TRACK SUPPLIES: Angle Bars	Std Spikes	Tie Plates[g]	Track Bolts[d]
Birmingham Area	$3.25	$3.35	$6.75		$64.00	$71.00	Not	$4.25	$5.35	$4.05	....
Chicago Area	3.25	3.35	6.75	$4.05	64.00	71.00	avail-	4.25	5.35	4.05	....
Pittsburgh Area	3.25	3.35	6.75	4.05	64.00	71.00	able	4.25	5.25	4.05	....
Buffalo Area	3.30	3.35	6.75	4.05	64.00	71.00	....	4.25	5.35	4.05	$8.50
Cleveland	....	....	6.75	....	....	....	....	....	....	....	8.50
Youngstown Area	....	3.35	....	....	....	....	....	....	5.35	....	....
Geneva	3.25	....	....	....	....	....	....	....	....	....	....
Los Angeles	....	4.10	....	....	....	....	....	....	5.35	....	....
Pueblo	3.25	3.35	....	....	64.00	71.00	....	4.25	5.35	4.05	8.50

a Fabricated: To consumers, $4.25; except $5.00 Seattle, Wash. *b* Rail steel price $4.65, Williamsport, Pa. *c* Rail steel $102 per ton Williamsport, Pa. *d* Treated: ... Untreated $8.25. *e* Except $70.00 Indiana Harbor, Ind. and Minnequa, Colo. *f* Except $85.00 Minnequa, Colo. burg, Calif., $4.50 Seattle, Wash. *g* Except $4.20 Pitts-

IRON AND STEEL PRODUCTS—F. O. B. WAREHOUSE, PER 100 LBS., BASE PRICE

	STRUCTURAL SHAPES: Per 100 lb. base price	REINFORCING BARS[g]: Per 100 lb., base price[u]: 5 tons to carload lot[b] New billet	Rail steel	Add for switch	EXPANDED METAL LATH[k]: Per 100 sq. yd., carload lots: $/cwt for Del.	Std. diamond mesh, 3.4 lb.	Std. ribbed 3.4 lb.	WELDED FABRIC REINFORCING[d]: Per 100 sq. ft., carload lots: 4x16 in., No. 5 & 10 wires	4x12 in., No. 8 & 12 wires	6x6 in., No. 6 & 6 wires
Atlanta	$4.75	$5.22½[k]	$5.22½[k]	$.025	$.10	$31.50	$31.50			
Baltimore	5.51	4.47[l]	....	....	.10	40.00	43.00			
Birmingham	5.15	5.15	5.50	.05	.15	43.00[p]	45.50[p]			
Boston	5.57[c]	5.46[h]	5.34[kc]	....	.10/.15	31.00	33.00			
Chicago	5.05	4.70[ff]	4.70[ff]	.05	....	31.00‡	33.00‡			
Cincinnati	5.45‡[r]	5.58[cc]	....	....	....	31.00[zee]	35.00[zee]			
Cleveland	5.62[hh]	4.37[r]	....	....	.10	34.50	36.50			
Dallas	6.50	6.50	6.50	....	....	43.50	46.00			
Denver	6.30	6.45[e]	....	....	....	43.00[a]	50.00[qq]			
Detroit	5.35	....	....	....	.10	33.00[x]	44.00[q]			
Kansas City	6.00	5.35[d]	5.10	....	....	37.00	39.00			
Los Angeles	5.75[f]	6.15[bb]	....	....	.15	37.00[f]	41.00[kk]			
Minneapolis	5.20[ee]	5.20[ll]	5.20[ll]	....	.15	34.50	36.50			
Montreal	5.25[i]	5.15[i]	5.15[i]	....	....	44.10[h]	46.80[h]			
New Orleans	....	5.00[nk]	....	.05	.10	32.00	32.00			
New York	5.15[r]	6.00	6.00	....	.15/.20	34.50[st]	36.50[st]			
Philadelphia	5.04	5.15	....	....	....	30.00‡	32.00‡			
Pittsburgh	4.40/4.50	4.40/4.50	4.40/4.50	.05	.10	32.50	34.50			
St. Louis	5.42[c]	5.28[c]	5.28[c]	....	....	42.00[aa]	48.00[aa]			
San Francisco	5.90[ii]	5.65	....	....	....	36.50	38.50			
Seattle	4.30[e]	5.25[ol]	....	....	....	52.00[smm]	42.00[smm]			

F.o.b. Mill: Joliet, Illinois, Donora, Penn., $2.36; Monessen, Penn., $2.40

F.o.b. Mill: Joliet, Illinois, Donora, Penn., $1.63; Monessen, Penn., $1.66‖

F.o.b. Mill: Joliet, Illinois, Donora, Penn., $2.47; Monessen, Penn., $2.52

‡ Delivered *a* Mill prices. *b* 1-5 tons, add 35c. Less than 1 ton, add 50c. *c* 20 tons or over base. *d* Mill price plus freight. *e* F.o.b. plant. *f* Includes delivery in free delivery zone. *g* High scrap steel prices cut former 15c. differences between new billet and rail steel. *h* List price. Dominion tax exempt. Provincial and Municipal tax extra. *i* Plus Dominion, Provincial and Municipal sales tax. *j* Price per ton. *k* F.o.b. city. *l* Intermediate and hard grade, new billet. *m* Per sq. yd. *n* 5 to 15 tons base. *p* Del. of 5000 sq. yd. or less. *q* Std. ribbed. 4 lb. per sq. yd. *r* 5 tons or over. *s* L.C.L. *t* Asphalt coated. *u* Note: Revised size extra—1 in., 1¼ in., 1 ¼ in. 10c, ½ in., ¾ in 15c, 1 in. 20c, 1 ¼ in. 35c, 1½ in. 55c, 2 in. $1.30. *v* Under 20 tons. Straight. *w* Copper bearing. *x* 2.5 lb. per sq. yd. *y* $.0093 transportation tax included. *z* Copper alloy. *aa* Delivered truck to job. Contractor to do unloading. *bb* Includes 55c extra for ½ in. size. *cc* Up to 14,999 lbs. *dd* F.o.b. dock. *ee* F.o.b. cars. *ff* Carload lots. *gg* Including sales tax. *hh* Delivered price is $5.62. *ii* Rolled at Geneva mill. Shapes rolled at Fontana, $6.90. *kk* ½" ribbed. *ll* 5 to 8 tons. *mm* 2% off for cash.

PLUMBING, HEATING, WATER, SEWER AND DRAIN PIPE

Mill	C. I. PIPE: Per net ton f.o.b. 6 in. to 24 in.[a]	VITRIFIED SEWER PIPE: Per foot, Delivered ASTM C13-44T: std. 8 in. s.s.	std. 12 in. s.s.	24 in. ds.	36 in. ds.	CLAY DRAIN TILE ASTM C4-24: Per 1,000 ft., carload lots, f.o.b.: 6 in.	8 in.	CONCRETE SEWER PIPE: Per ft., delivered: ASTM C 14-41: 12 in	24 in.
Atlanta	$100.50	$0.43	$0.67	$3.39	$7.00	$114.00	$140.00	$0.45	$2.00
Baltimore	104.86	.52	.975	4.21	9.34	178.20	228.00	.80	2.25
Birmingham	93.50	.40	.72	2.84	....	210.00‡	375.00‡	.90	2.50
Boston	108.46	.44[tuvx]	.850[5uvx]	3.87[uvy]	10.36[uvy]	173.40	267.60	1.45‡[mq]	3.60‡[mq]
Chicago	107.49	.59	1.14	4.81	13.45	150.00‡	270.00‡	.70	2.35
Cincinnati	105.96	.441	.8505	3.51	9.53	220.00‡	340.00‡	.60	2.25
Cleveland	108.13	.357[r]	.6885[r]	3.015[r]	8.405[r]	147.50	231.00	.65	2.50
Dallas	110.28	.365	.657	2.63	6.25	....	....	.49	1.60
Denver	115.36	.41[dd]	.71[dd]	2.98[dd]	....	....	....	.74[dd]	2.50[dd]
Detroit	103.13	.553	1.10	4.20	12.75	195.00‡[m]	303.00‡[m]	.65	2.50
Kansas City	109.41	.418[m]	.76[m]	3.00[m]	....	215.00[m]	375.00[m]	.60[l]	2.00[l]
Los Angeles	122.06	.426	.927	4.532	11.298	193.00‡	324.00‡	.72	....
Minneapolis	111.67	.62[mo]	1.12[mo]	4.35[m]	....	....	....	1.29[hh]	3.67[hh]
Montreal	100.00	.77[s]	1.35[s]	4.47[s]	8.50[es]	.60[p]	.48[p]	75.00[jkaa]	240.00[jkhaa]
New Orleans	103.68	.412	.762	3.955	9.15	231.00[bb]	405.00[bb]	.55	1.95
New York	103.80/108.50	.62	1.14	4.45	12.30	....	....	1.00	2.50
Philadelphia	101.47	.54	.99	4.08	10.28	235.00‡	300.00‡	1.25[hh]	3.20[hh]
Pittsburgh	108.76	.364[m]	.702[m]	2.70[m]	6.628[m]	134.20	197.40	1.05[h]	2.50[g]
St. Louis	105.27	.48	.87	3.42	8.05	....	....	1.10[il]	2.25[il]
San Francisco	122.06	.50[d]	.99[d]	4.32	10.80	188.00[dl]	313.00[dl]	.69	2.85
Seattle	123.95	.51[b]	.91[b]	....	....	150.00[e]	....	.80[ee]	2.40

*WROUGHT STEEL PIPE (Full standard weight)

Mill	3½ to 6 in. Lap Weld: Black	Galv.	8 in. Lap Weld: Black	Galv.	8 in. Butt Weld: Black	Galv.	Continuous weld
Lorain, Ohio	46.5[su]	24.5[su]	24.5[su]	22.5[su]	24.5[su]	22.5[su]	
Aliquippa, Pa.	46.5	24.5	24.5	22.5	24.5	22.5	
Sparrows Pt., Md.	42.5	20.5	20.5	18.5	20.5	18.5	
Benwood, W. Va.	44.5	22.5	....	....	....	....	
Youngstown, O.	42.5	20.5	....	....	....	....	
Indiana Harbor, Ind.	42.5	20.5	....	....	....	....	
Sharon, Pa.	47.0	25.0	46.5[su]	24.5[su]	46.5[su]	24.5[su]	
Wheatland, Pa.	49.5	27.5	49.5	27.5	49.5	27.5	
Etna, Pa.	50.5	28.5	50.5	28.5	50.5	28.5	
Fontana, Calif.	49.5	27.5	49.5	27.5	49.5	27.5	

†Threaded and coupled ‡ 3½ to 4 in. Note: Galv. pipe discounts shown above raised 1½ points as we go to press except Fontana up 10%.

‡ Delivered † F.o.b. *a* B. & S. class B and heavier, CL. Burlington, N. J. (base) $98.50. Based on existing freight rates; subject to rate change. Gas pipe and class A, $5 per ton additional. 4 in., $5 per ton additional, 30 in. and larger, usually $1 per ton less. *b* Extra strength ASTM C 200-44T. *c* 4-in., $90. *d* SS361-A. *e* 30 in. *g* Culvert pipe. Reinforced, ASTM C76-41. *h* Reinforced, ASTM C75-41. *i* Reinforced, ASTM C76-37. *j* Centrispun. *k* Per 100 ft. *l* F.o.b. plant. *m* Truck delivery. *o* Listed price is based on LCL (no minimum). *p* Less than 5 ton loads, price per ft. *t* Within switching limits. *u* ASTM C13-40. *v* F.o.b. city. *x* 2 ft. lengths. *y* 3 ft. lengths. *z* CESA A 60-1941 specifications used. *aa* No standard specifications in Can. *bb* Freight allowed to destination in city. *cc* Truck loads, f.o.b. plant, Newton. *dd* LCL, delivered, f.o.b. truck. *ee* 1 % off for cash.

*WROUGHT STEEL PIPE: Discounts from standard list consumers carload prices. Base price approx. $200 per net ton. List prices per ft.: *Butt Weld:* ¼ in., 5½¢; ⅜ in., 6¢; ½ in., 6¢; ¾ in., 8½¢; 1 in., 11½¢; 1 in., 17¢; 1¼ in., 23¢; 1½ in., 27½¢; 2 in., 37¢; 2½ in., 58½¢; 3 in., 76½¢. *Lap weld:* 3½ in., 92¢; 4 in., $1.09; 5 in., $1.48; 6 in., $1.92. Freight rates to destination to be added to price, plus 3 percent tax on transportation.

WROUGHT IRON PIPE: List prices per ft. same as wrought steel pipe. Discount for Pittsburgh base. *Butt weld* — 1 in. and 1¼ in. black, +4.5, galv. +32.5; 1¼ in. black, 1.5, galv. +29.0; 2 in. black 2, galv. +28.5. *Lap weld* — 2½ in. to 3½ in. black + 5, galv. +32.0; 4 in. to 8 in. black + 2, galv. +27.5. Freight rates to destination to be added to name delivered price.

TONCAN IRON SECTIONAL PLATE PIPE AND ARCHES

Low Installation Costs—Light weight makes them easy to haul, handle, erect . . . in any weather . . . with unskilled labor. Shipped "knocked-down"—individual plates and special bolts arrive on job in one complete lot—save freight.

Long Life—Strong, resilient . . . carry tremendous loads safely . . . will not crack or crumble in hauling or in use. Resist damage due to vibration, impact, severe weather changes, settling earth and other causes. Resist rust and corrosion—contain twice the copper used in copper-bearing irons and steels, *plus* molybdenum. Assure lowest cost per year of service. Two-inch corrugations mean even higher strength . . . wider spans . . . greater economy.

100% Salvage Value—Can be re-used without loss.

Save Money

Write for full information and engineering data.

REPUBLIC STEEL CORPORATION
GENERAL OFFICES • CLEVELAND 1, OHIO

Manufacturers of Toncan Iron Drainage Products

BEALL PIPE & TANK CORPORATION
PORTLAND, ORE.

BERGER METAL CULVERT CO. OF N. E.
WESTMINSTER, VT.

THE BOARDMAN COMPANY
OKLAHOMA CITY, OKLA.

BLUEGRASS PIPE & CULVERT CO.
LOUISVILLE, KY.

CENTRAL CULVERT CORPORATION
ALEXANDRIA, LA.

CHOCTAW, INC.
MEMPHIS, TENN.

DOMINION METAL & CULVERT CORP.
ROANOKE, VA.

EATON METAL PRODUCTS CORP.
OMAHA, NEB.
HUTCHINSON, KAN.

EATON METAL PROD. CO. of MONTANA
BILLINGS, MONT.

EMPIRE STATE CULVERT CORP.
GROTON, N. Y.

ILLINOIS CULVERT & TANK CORP.
PEORIA, ILL.

JENSEN BRIDGE & SUPPLY COMPANY
SANDUSKY, MICH.

THE H. V. JOHNSTON CULVERT CO.
MINNEAPOLIS, MINN.
ABERDEEN, S. DAK.

M & M HIWAY MATERIALS CO.
COLUMBIA, MO.

REPUBLIC STEEL CORPORATION
Culvert Division
CANTON, OHIO
PHILADELPHIA, PA.

THOMPSON PIPE & STEEL COMPANY
DENVER, COLO.

TRI-STATE CULVERT & MFG. CO.
TAMPA, FLA.
DECATUR, GA.

WISCONSIN CULVERT COMPANY
MADISON, WIS.

WYATT METAL & BOILER WORKS
DALLAS, TEX.
HOUSTON, TEX.

Toncan* Copper Molybdenum Iron is available in:
CORRUGATED METAL PIPE • PERFORATED CORRUGATED METAL PIPE • CORRUGATED METAL PIPE-ARCH • CONVEL SUBDRAIN PIPE
SPIRAL RIB PIPE • SECTIONAL PLATE ARCHES • SECTIONAL PLATE PIPE-ARCH • BITUMASTIC COATED AND [illegible]
*Reg. U. S. Pat. Off.

LUMBER, TIMBER, PLYWOOD—PER M FT., B.M., CARLOAD LOTS F. O. B.

		SHORT LEAF YELLOW PINE AND DOUGLAS FIR								LONG LEAF Y. P.		PLYWOOD	
		All S. L. Y. P. is No. 2 common or better and for No. 1 N. C. Box. *All Fir planks No. 2 common, Fir timber is No. 1 common.*					Prices in Bold Face (*Prices in italics*) *Lengths up to 20 ft.*			Merchantable grade up to 20 ft.		Rail freight increment* (See note for base price)	
		1x6 s4s	1x8 s4s	2x4 s4s	2x6 s4s	2x8 s4s	2x10 s4s	3x12 8/4	6x12 8/4	12x12 8/4	2x12 8/4	12x12 8/4	5/8"	3/4"
Atlanta	*l*	**$70.00**	**$71.00**	**$60.00**	**$62.00**	**$65.00**	**$68.00**	**$70.00**					**$22.32**	**$27.24**
Baltimore		**90.00**	**92.00**	**95.00**	**95.00**	**95.00**	**98.00**	**115.00**			**175.00**	**175.00**	**22.86**	**27.90**
		120.00	*120.00*	*115.00*	*115.00*	*115.00*	*115.00*	*125.00*	*125.00*	*125.00*				
Birmingham	*l*	**83.00**	**87.50**	**73.00**	**75.00**	**78.00**	**82.50**	**95.00**			**130.00**	**125.00**	**21.78**	**26.58**
	l	*80.00*	*80.00*	*77.00*	*77.00*	*77.00*	*77.00*	*98.00*	*98.00*	*98.00*				
Boston		**78.00**[1]	**78.83**[3]	**83.00**[4]	**83.00**[4]	**83.00**[4]	**88.00**[4]				**105.00**	**105.00**	**22.86**	**27.90**
		90.00	*90.00*	*92.00*	*80.00*	*80.00*	*100.00*	*100.00*	*100.00*	*100.00*				
Chicago	‡	**84.00**	**89.00**	**79.00**	**81.00**	**83.50**	**89.00**	**93.00**			**116.00**	**116.00**	**18.72**	**22.80**
	‡	*84.00*	*87.00*	*85.00*	*86.00*	*87.00*	*87.00*	*88.00*	*92.00*	*92.00*				
Cincinnati		**88.00**	**100.00**	**85.00**	**90.00**	**97.50**	**98.00**	**110.00**			**150.00**	**150.00**	**21.78**	**26.58**
		125.00	*125.00*	*90.00*	*100.00*	*120.00*	*120.00*	*120.00*	*130/135*	*130/135*				
Cleveland	*m*	**78.80**	**78.80**	**70.72**	**80.82**	**81.83**	**84.00**	**93.00**					**22.20**	**27.12**
Dallas	*m*	**71.00**	**71.00**	**61.00**	**59.00**	**61.00**	**66.00**	**80.00**			**82.50**	**90.00**	**18.72**	**22.80**
Denver		*92.00*	*92.00*	*97.00*	*95.00*	*95.00*	*95.00*	*101.00*	*117.00*	*116.00*			**13.92**	**16.98**
Detroit	*m*	**76.00**	**80.00**	**65.00**	**76.00**	**82.00**	**82.00**						**21.78**	**26.58**
		80.00	*82.00*	*86.00*	*84.00*	*84.00*	*85.00*							
Kansas City													**16.56**	**20.16**
	b	*82.50*	*82.50*	*89.75*	*90.25*	*90.25*	*90.25*	*99.00*						
Los Angeles	*a*	*73.00*	*73.00*	*73.00*	*73.00*	*73.00*	*73.00*	*85.00*	*95.00*	*85.00*			**13.38***gA*	**16.26***gA*
Minneapolis	*b*	*105.00*	*105.00*	*105.00*	*105.00*	*105.00*	*105.00*						**16.56**	**20.16**
Montreal	*e*	**73.00**	**76.00**	**73.00**	**75.00**	**76.00**	**85.00**							
		155.00	*155.00*	*155.00*	*155.00*	*155.00*	*155.00*		*155.00*					
New Orleans	*l*	**66.00**	**70.00**	**70.00**	**75.00**	**75.00**	**70.00**	*85.00*			**100.00**	**105.00**	**18.72**	**22.80**
	l	*68.70*	*68.70*	*71.00*	*75.00*	*78.50*	*78.50*	*87.00*	*87.00*	*87.00*				
New York	‡	**84/87.50**	**87.90**	**Range from $72.50 to $85.00**				**95/100**			**175.00**†	**175.00**†	**22.86**	**27.90**
	‡			*Range from $92.50 to $97.00*					*105/120*	*105/120*				
Philadelphia				**Range from $90.00 to $100.00**							**166.00**	**166.00**	**22.86**	**27.90**
				Range from $105.00 to $115.00					*122.00*	*122.00*				
Pittsburgh	*l*	**85.90**	**75.80**	**80.85**	**80.85**	**85.90**	**80.90**	**110.00**					**22.56**	**27.48**
	l	*100/120*	*100/120*	*100/110*	*100/110*	*100/110*	*100/120*	*120/130*	*130.00*	*130.00*				
St. Louis	‡	**85.00**	**87.25**	**74.25***m*	**74.25***m*	**91.75***n*	**94.00***n*	**95.00**			**104.75**	*137.50*	**18.72**	**22.80**†
	‡			*99.50n*	*101.25n*	*102.25n*	*102.25n*	*106.50*	*130.00*	*130.00*				
San Francisco	*d*	*68.00*	*68.00*	*68.00*	*68.00*	*68.00*	*65.00*	*65.00*	*65.00*	*65.00*			**10.08***g*	**12.30***g*
Seattle	*l*	*62.50i*	*62.50i*	*62.50i*	*62.50i*	*62.50i*	*62.50i*	*62.50i*	*62.50i*	*62.50i*				

Bold Face type, Southern Pine. *Italics, Douglas Fir.* † Spruce. * Western Pine No. 3 Common. ‡ Delivered. *a* Yard prices. *b* Retail prices, less than C.L. *c* 5 M ft. or less. *d* Direct mill prices; f.o.b. purchasers carrier or truck. *e* Tax exempt. *g* Lower rate by water shipment. *h* 50,000 lb. minimum. *i* No. 1 common. *j* Delivered in 5000 ft. lots. *k* These are retail yard prices quoted per truck load in Greater Cleveland. Less 2% for cash. Truck lots. *l* F.o.b. mill. *m* 8 to 12 ft. lengths. *n* 8 to 16 ft. lengths.

Note: Special concrete form grade Fir Plywood, 4' by 8' panels, 5-ply, sanded 2 sides, water resistant glue, carload lots, delivered per 1,000 sq. ft. surface. Seattle base price on ½", $160.00; on ¾", $190.00. For other centers add rail freight increment from table on proper size. Oiling and edge sealing charges included.

† 18 ft. and under. *Freight rate increase of 4c per cwt., effective Jan. 11, not included in these figures.

GLASS, EXPLOSIVES, CHEMICALS

	WINDOW GLASS Discounts from jobbers list, Jan. 16, 1940*a* Single or Double Thickness A quality	B quality	EXPLOSIVES Per lb. 40% Ammonia Gelatin in 50 lb. cases delivered in 200 lb. lots*	
Atlanta	76%	76%	$0.2025	
Baltimore	70-10%	71-10%	.2025	
Birmingham	68%	68%	.1575	
Boston	...	60%*i*	.2025	
Chicago	64%	64%	.2025	
Cincinnati	62-10%*e*	62-10%*e*	.2025	Price of 60% Ammonia Gelatin is $0.0125 per lb. higher than 40%
Cleveland	62-10-10-10%	62-10-10-10%	.2425	
Dallas	65%	65%	.215	
Denver	66%	66%	.2075	
Detroit	62-10-10%	62-10-10%*e*	.2025	
Kansas City	65%*e*	65%*e*	.2075	
Los Angeles	58%	63%*f*	.21	
Minneapolis	64%	64%	.2075	
Montreal	40-5%*he*	40-10-5%*he*	18.90*h*	
New Orleans	68%	68%	.2125	
New York	71%	72%	.32*g*	
Philadelphia	66%	67%	.2025	
Pittsburgh	70%	70%	.175	
St. Louis	70-10%	70-10%	.2075	
San Francisco	66%	73%	.2075	
Seattle	54%	55%	.21	

Glass. a Jobbers' list price per box, 14 x 20, ss, $20.75 for A quality, $18.00 for B quality; 14 x 20, ds, $30.75 for A quality, $26.00 for B quality. *b* Discount from list, Sept. 1939; sales tax included; list 6% tax exemption not allowed before. *c* Single thickness. *e* Discount from list of Aug. 15, 1938. *f* ss; ds—62%. *i* Double thickness 65%.

Explosives. * Urban prices influenced by service charges or local storage and delivery regulations do not consistently reflect quantity prices in less congested areas. *g* In borough of Kings, Queens, and Richmond and in Manhattan south of Canal St., add delivery charge of $0.00 per trip. *h* F.o.b. city per 100 lb. Forcite, 40%. Forcite 60%, $20.65.

40% Ammonia Gelatin price ranges in other than urban areas, per lb. (except Seismograph Grades)

	C.L. 20,000 lb. net	Tons	200 lb. lots
E. of the Miss., except Fla. and Me.	$0.155	$0.1825	$0.2025
W. of Miss. to Rocky Mtn. States			
Fla. and Maine	.16 – .1675	.1875 – .20	.2075 – .22
Rocky Mtn. States	.16 – .1725	.1875 – .20	.2075 – .225
Pacific N. W. States	.1575 – .17	.19 – .2025	.21 – .2225
Pacific S. W. States	.155 – .1625	.1875 – .195	.2075 – .2175

PILES, TIES F. O. B.

PILES

Prices per linear foot, fir and pine, bark on, f.o.b. cars, New York. Fir based on Wash. and Ore. points to New York shipping area; pine based on freight from Norfolk.

Dimensions	Points	Length	By Rail—Pine*	By Rail—Fir
12-in. at butt	6-in.	30 to 50-ft.	$0.36	....
12-in.—2-ft. from butt	6-in.	50 to 59-ft.	.39	....
12-in.—2-ft. from butt	6-in.	60 to 69-ft.	.43	....
12-in.—2-ft. from butt	6-in.	90 to 100-ft.	....	.72
13-in.—3-ft. from butt	5-in.	91 to 100-ft.	....	.73
14-in.—2-ft. from butt	6-in.	50 to 69-ft.	.43	.80
14-in.—2-ft. from butt	6-in.	70 to 79-ft.	.47	.74
14-in.—2-ft. from butt	5-in.	80 to 85-ft.	.60	.75
14-in.—2-ft. from butt	5-in.	85 to 89-ft.	....	.76
14-in.—2-ft. from butt	5-in.	90 to 100-ft.	....	.80

* Pine piling over 80-ft. available only in limited quantities.

RAILWAY TIES

Prices f.o.b. per tie for carload lots:		6"x8"x8' Untr.	6"x8"x8' Tr.	7"x9"x8'6" Untr.	7"x9"x8'6" Tr
Boston	Oak	*k*	....	....	....
	Pine	*k*	....	....	....
New York	S. L. Sap Pine	$1.65	$2.85	$2.00	$3.30
	Mixed Oak	1.80	3.05	2.50*c*	3.60
Birmingham	Hardwood	1.00	1.60*a*	....	2.25*a*
Chicago	Red Oak	....	2.55 2.60*a*	....	*3.40 3.65a*
Los Angeles	Douglas Fir	....	3.00*a*	....	....
	Redwood	1.86	....	....	....
Philadelphia	Red Oak	2.33	3.13	3.10	4.25*a*
St. Louis	White Oak	2.42	....	3.22	....
	Red Oak	2.32	2.97*a*	3.12	4.05*a*
	Sap Pine or Cypress	3.04*a*	....	....	....
San Francisco	Douglas Fir	1.28*e*	2.24*f*	1.70*bf*	3.05*caf*
Montreal	Birch or Maple	*k*	*k*	*k*	*k*

Tr.—Treated; Untr.—Untreated. *a* Creosoted. *b* 7" x 9" x 8'. *c* Empty cell. *e* Green. *f* F.o.b. cars. *k* No constant price available. *s* Not available

CHEMICALS

Water, sewage treatment, road work, f.o.b. carlots, New York

Bleaching powder in drums f.o.b. works, per 100 lb.	$4.25
Chlorine cylinders, liquid, per lb. f.o.b. works	.07–.12
Calcium chloride, 77-80%, flaked, 100-lb. paper bag, f.o.b. works, ton	22.00
Silicate of soda, 52 deg., in drums, f.o.b. works, per 100 lb.	1.80
Soda ash, 58%, in paper bags, per 100 lb. dense	1.50
Sulphate of aluminum, commercial, in 100-lb. bags f.o.b. works	1.50
Sulphate of copper, in bags, 99% per 100 lb f.o.b. works	8.10

Our Engineering Department will gladly help you select the right construction of Preformed "HERCULES" (Red-Strand) Wire Rope for your particular equipment.

. . . As a measure of value, nothing can take the place of PERFORMANCE . . . By the use of this accurate yardstick — year after year and under extremely severe working conditions of all kinds — Preformed "HERCULES" (Red Strand) has become recognized as "the Dependable Wire Rope for Any Tough Job". For over 60 years the "Red-Strand" has been a reliable guide to safe and economical wire rope service.

MADE ONLY BY

A. LESCHEN & SONS ROPE CO.

ESTABLISHED 1857

5909 KENNERLY AVENUE • ST. LOUIS 12, MISSOURI

NEW YORK 6 • CHICAGO 7 • HOUSTON 3 • DENVER 2
LOS ANGELES 21 • SAN FRANCISCO 7 • PORTLAND 9 • SEATTLE 4

STRUCTURAL CLAY BUILDING TILE, BRICK AND LIME—DELIVERED

	STRUCTURAL CLAY TILE PARTITION — SCORED Per M. lots of 2,000 pieces or over.			STRUCTURAL CLAY TILE — LOAD BEARING — SCORED Per M. lots of 2,000 pieces or over.			BRICK Per M. in quantity		LIME Per ton. In paper, Carload lot.		
	3x12x12 in.	4x12x12 in.	8x12x12 in.	8x12x12 in.	10x12x12 in.	12x12x12 in.	Common backing	Straight hard	Hydrated finishing	Common hydrated	Pulverized, or lump
Atlanta	.....	.....	.....	.....	.....	.....	$25.00	$25.00	$19.00	$17.50	$17.50
Baltimore	$170.00	$180.00	$320.00	$375.00	.....	.....	32.00*k*	35.00*k*	30.00	20.00	.....
Birmingham	97.50	104.00	195.00	231.00	.....	.....	20.00*ff*	22.50*ag*	24.67	18.10	.....
Boston	145.65†	155.35†	291.30†	330.15†	.....	.....	32.00*s*	35.00*s*	30.80†	26.40†	.....
Chicago	115.00	122.50	230.00	.....	.....	.....	21.00	23.00	27.00	19.50	.....
Cincinnati	170.00*j*	180.00*j*	240.00*jdd*	330.00*j*	330.00*j*	330.00*j*	34.00*j*	34.00*j*	22.25*i*	20.50*j*	.....
Cleveland	118.00*ee*	126.00*ee*	236.00*ee*	.....	.....	.....	28.50	28.50	24.00	22.00	28.50*ee*
Dallas	.....	110.00	.....	.....	.....	.....	18.75	33.25	28.00	22.00	.....
Denver	.....	.....	.....	.....	.....	.....	32.00	32.00	34.80*bb*	28.00*bb*	34.00*bb*
Detroit	117.08	124.88	234.15	234.15	$290.68	$332.20	30.00*cc*	31.50*ee*	30.00	28.00	28.00
Kansas City	115.50	122.50	.....	245.00	305.50	367.00	22.63*o*	25.12*o*	36.00*p*	30.00*p*	30.00*p*
Los Angeles	*r*	*r*	*r*	*r*	*r*	*r*	20.00§	.....	.....	36.00	35.00
Minneapolis	152.00*p*	176.00*p*	317.00*p*	176.00*wp*	.....	.....	30.00*ep*	.....	35.00*bbe*	26.00*bbe*	35.00*bbde*
Montreal	110.00*aq*	120.00*aq*	225.00*aq*	.....	.....	.....	25.50	37.00	12.50*ub*	14.00*ub*	.....
New Orleans	160.00	160.00	300.00	.....	.....	.....	29.00	.....	38.00	26.00	37.50
New York	118.20*ch*	126.00*ch*	173.30*ch*	189.00*hn*	.....	.....	33.00	.....	34.40	26.80	.....
Philadelphia	112.10	119.60	224.20	269.10	321.20	405.10	27.00	30.00	29.75	17.50	24.50
Pittsburgh	98.50	105.80	181.85	207.30	265.85	303.60	26.00	38.00*y*	20.45	16.65	2.97*m*
St. Louis	120.00	138.50	252.50	252.50	339.50	.....	32.50*nl*	30.50*al*	.80*aaqp*	.60*aaqp*	1.00*aaspee*
San Francisco	132.00*a*	148.50*a*	198.00*dda*	148.50*ta*	.....	.....	30.00	.....	24.95	24.95	2.49*m*
Seattle	150.00*cc*	160.00*cc*	.....	160.00*ccw*	.....	.....	32.00*s*	39.00*s*	32.00*hh*	32.00*hh*	3.60*mhh*

† F.o.b. *a* Smooth. *b* Per 50 lb. bags. *c* 6 x 12 x 12 in.-3 cell. *d* Pulverized hot. *e* 5% 10th following month. *g* 5½ x 8 x 12. *h* F.o.b. trucks, job site N.Y.C. *i* F.o.b. warehouse only. *j* Truck load or over. *k* $1.00 discount. *l* Red face. *m* Per bbl., 180 lb. *n* 7½ x 7½ x 12. Speed tile. *o* F.o.b. Buffalo. *p* Truck lots. *q* Provincial and Municipal tax extra. *r* Not used because of earthquake danger. *s* 2% discount for cash. *t* 5½ x 8 x 11½. *u* Tax exempt. *v* Sand lime. *w* 5 x 8 x 12. *y* Stacked. *z* Pebble lime price per 80 lb. sack. *aa* Price per sack. Lime not sold per ton. *bb* LCL. *cc* Truck delivery. *dd* 6 x 12 x 12. *ee* Pebble lime. *ff* 80% common. *gg* Select. *hh* LCL. § F.o.b. plant.

PAINT, ROOFING—F.O.B. CARLOAD LOTS

	RED LEAD Per 100 lb. in 600-lb. (Approx.) bbl	WHITE LEAD Per 100 lb. in 100 lb. cases	READY-MIXED PAINT Per gal., drums			ROOFING SUPPLIES Carload lots f.o.b. factory				
	Dry *a*	In oil *w*	Graphite *b*	Aluminum *c*	Ferric Oxide *d*	Rolls, slate surfaced, 85-90 lb. per sq.	Asphalt felt, per 100 lb.	Tar felt, per 100 lb.	Asphalt coating per gal.	Tar pitch 360 lb. bbl. per ton
Atlanta	$22.10	$30.375	$1.75	$2.70	$1.65	$2.06‡	$2.06‡	$2.06‡	$1.00‡	$36.00‡
Baltimore	21.85	30.00	2.25	3.50	2.75	2.75	3.30	3.30	.55	36.00
Birmingham	22.10	30.375	4.40	4.52	....	3.05	3.00	3.00	.48	42.00*ee*
Boston	21.85	30.00	....	....	....	.....	.....	2.75‡*q*	.....	34.00
Chicago	21.85	30.00	....	....	....	2.47‡*u*	2.67‡*o*	2.67‡*o*	35.00‡*bbe*	38.00‡
Cincinnati	21.85	30.00	....	....	....	2.44‡	2.54‡*o*	2.54‡*o*	.35*y*‡	42.00‡
Cleveland	21.85	30.00	3.00	3.00*s*	3.00	2.44	2.54*o*	2.54*o*	.32*y*	38.00
Dallas	21.85	31.00	....	4.05	....	3.50*q*	3.75*q*	4.35*q*	.36	46.00
Denver	21.85	30.50	2.88	4.38	2.63	3.17*o*	3.10*o*	2.54*o*	.41*ff*	48.00
Detroit	21.85	30.00	3.24	2.72	3.60	2.32	2.41	2.41	.....	36.00
Kansas City	21.85	30.125	2.40*q*	3.35*q*	....	....	....	....	.36*y*	
Los Angeles	22.10	31.00	2.80	4.00	3.50	2.41	1.77*e*	*i*	.65	*i*
Minneapolis	21.85	30.125*m*	....	....	....	2.32*vdd*	2.41*hdd*	2.41*hdd*	.33*tdd*	35.00*rdd*
Montreal	.....	25.65	3.25*t*	4.20*t*	3.62*t*	3.25*t*	3.00*tf*	3.00*tf*	.73*tt*	2.60*tt*
New York	21.85	30.00	3.45*y*	....	3.45*y*	2.32	2.41*o*	2.41*o*	.34*s*	35.00
Philadelphia	21.85	30.00	3.25	3.65	3.15	2.54	2.94	2.94	.37	26.00
Pittsburgh	21.85	30.00	2.00	2.40	1.90	3.00	3.10*o*	3.10*o*	.57	40.00
St. Louis	21.85	30.00	....	....	....	2.23	2.413*h*	2.413*h*	.36	36.00
San Francisco	22.10	30.25	1.80	2.75*n*	1.35	2.27*z*	3.30*aa*	....	.38*y*	
Seattle	22.10	30.50	2.95*m*	2.95*m*	....	3.25*mqcc*	3.35*hmcc*	....	.49*mcc*	58.38*mcc*

‡ Delivered. Note: Red lead in oil 50¢ higher than white lead in oil. *a* Red lead prices change frequently due to pig lead price changes. *b* U. S. War Dept. Spec. 3-49A. *c* ASTM Spec. D266-31. *d* 80% minimum ferric oxide. *e* 15 lb. *f* Per 432 sq. ft. *g* 55 gal. drums. *h* Per roll, 65 lb. *i* Net carload lot prices: Minneapolis and vicinity. *j* Asphalt patch. *k* Per cwt. *l* Not used. *m* 1% discount for cash. *n* May, 1941 price. *o* Per 60-lb. roll. *q* Per 900-lb. roll. *r* F.o.b. factory Chicago. *s* ASTM Spec. D266-31. *t* Federal tax included. *u* Per 90 lb. square. *v* Per ton. *w* Price to large paint contractors is $1.25 less. *z* Mineral surfaced. *y* 55-gallon container. *z* Drums. *aa* Approximate cost per 100 lbs. *bb* Roofers coating and cement. Price per ton. *cc* LCL, truck delivery. *dd* 2% cash discount. *ee* Asphalt, in 100 lb. package. *ff* 5-gal. drums.

SKILLED AND COMMON WAGE RATES—PER HOUR

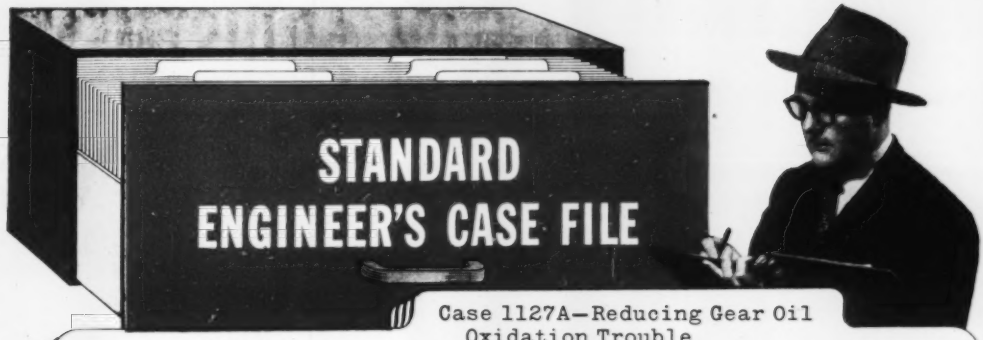
	Bricklayers	Carpenters	Struct. Iron Workers	Hoisting Engineers	Plasterers	Electrical Workers	Steamfitters	Common Labor Building	Common Labor Heavy Const.
Atlanta	$2.50	$1.775	$2.00	$2.00	$2.00	$2.00	$2.00	$0.85	$0.95
Baltimore	3.00	2.25	2.40	2.20 2.40	2.25	2.25	2.25	1.25	1.25
Birmingham	2.50	1.80	2.15	1.75	2.20	2.25	2.25	.95	1.05
Boston	2.625	2.10	2.40	2.45	2.50	2.30	2.30	1.65	1.65
Chicago	2.40	2.35	2.40	2.35	2.40	2.425	2.35	1.70	1.70
Cincinnati	2.50	2.20	2.35	2.50	2.375	2.375	2.35	1.46	1.46
Cleveland	2.375	2.325	2.375	2.25	2.375	2.375	2.375	1.725	1.725
Dallas	2.50	2.25	2.25	2.25	2.125	2.00	2.375	1.075	1.275
Denver	2.25	2.10	2.00	2.15	2.25	2.25	2.24	1.40	1.35
Detroit	2.50	2.20	2.40	2.40	2.50	2.40	2.40	1.575	1.575
Kansas City	2.50	2.05	2.20	2.275	2.50	2.30	2.375	1.475	1.40
Los Angeles	2.625	2.0375	2.30	1.9875	3.125	2.40	2.50	1.4875	1.4875
Minneapolis	2.25	2.05	2.175	2.00	2.35	2.21	2.25	1.45	1.45
New Orleans	2.50	1.875	2.25	2.125	2.00	2.30	2.25	1.025	1.025
New York	3.20*b*	2.75*b*	3.00	3.00	3.20*a*	3.00*a*	2.75*b*	1.70	1.70
Philadelphia	2.75	2.25	2.65	2.50	2.50	2.375	2.50	1.25	1.25
Pittsburgh	3.00	2.50	2.50	2.65	2.625	2.375	2.50	1.50	1.50
St. Louis	2.75	2.45	2.425	2.55	2.50	2.50	2.50	1.50	1.65
San Francisco	2.8125	2.16	2.40	2.125	2.25	2.50	2.375	1.525	1.525
Seattle	2.495	2.195	2.395	2.33	2.495	2.395	2.50	1.795	1.83
Montreal*	1.40	1.25	1.30	1.20	1.40	1.35	1.11	.94	.88

a 6 hr. day. *b* 7 hr. day. * Cost of living bonus now included in basic wage.

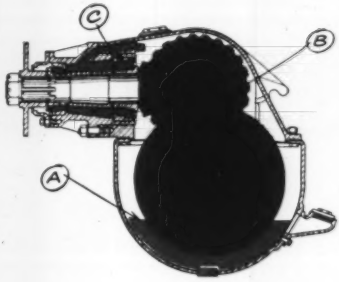
MEXICO CITY PRICES

In Pesos, F.o.b. City		Feb. '49	Mar. '49
Common Wages—Building (8 hr. day)	av. per hr.	.57	.57
Common Wages—Heavy Const. (8 hr. day)	av. per hr.	.75	.75
Skilled Labor Wages			
Carpenters (8 hr. day)	av. per hr.	1.25	1.25
Bricklayers (8 hr. day)	av. per hr.	1.25	1.25
Struct. Iron Workers (8 hr. day)	av. per hr.	1.50	1.50
Struct. Steel Shapes			
3"-15" x 12 meters	per ton	1,000.00	1,000.00
Reinf. Steel, Corr. Rods			
⅜" x 12 meters	per ton	1,070.00	1,200.00
½" x 12 meters	per ton	1,090.00	1,100.00
⅝" x 12 meters	per ton	1,050.00	1,100.00
¾" x 12 meters	per ton	1,050.00	1,100.00
⅞" x 12 meters	per ton	1,050.00	1,100.00
1" x 12 meters	per ton	1,050.00	1,100.00
Gravel, truck load of 3½ cu. meters			
Blue Gravel	per tr. load	35.00	32.00
Rose Gravel	per tr. load	35.00	32.00
Cement, Std. Port. (Tolteca)	per ton	120.00	115.00
Lumber			
Mex. Sacred Fir (Oyamel)	per M ft.	375.00	375.00
1st Class Pine	per M ft.	750.00	750.00
2nd Class Pine	per M ft.	450.00	450.00

ENR Skilled Average: (Bricklayers, Carpenters, Iron-workers) **$2.378. ENR Common Average: $1.424**



Case 1127A—Reducing Gear Oil Oxidation Trouble



DIFFERENTIAL GEARS

RPM Gear Oil in automotive gears requiring straight mineral oil practically eliminated deposit formation. Recommended for conventional gears where manufacturers specify uncompounded lubricant. Comes in three grades: SAE 90, 140, 250.

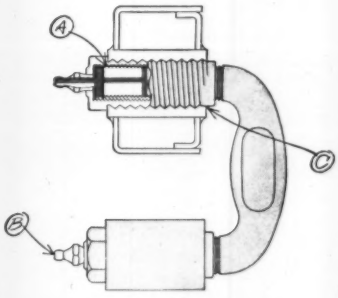
A. Made from selected paraffinic oil stocks—highly resistant to extreme temperatures and oxidation.

B. Provides tough lubricating film—withstands moderately severe gear tooth pressures and shock loads.

C. Will not corrode bronze bushings, bearings or other parts.

RPM Gear Oil contains a very effective foam inhibitor which prevents air bubbles from forming and building up pressure in cases. A low pour-point permits easy flowing in zero weather.

Case 1128—Reducing Chassis Bearing Wear



U-TYPE SPRING SHACKLE

Replacement of shackle bearings, kingpins, fifth wheel plates, etc., on a fleet of trucks and busses was reduced materially by regular lubrication with RPM Chassis Grease T-B. Recommended for all chassis lubrication in any operation. Comes in 3 grades, Light, Medium, Heavy, to meet all climatic conditions.

A. Resists shock loads . . . effective anti-wear ingredient assures cushioning film between parts.

B. Pumps easily and feeds to entire bearing surface — prevents "spot wear" from shifting bearing loads. Special stringiness additive helps keep lubricating film on bearings under all conditions.

C. Forms protective seal at outside edges of bearings — keeps out dust, grit and water.

Extremely stable, RPM Chassis Grease T-B will not change in structure while in use or in storage.

For additional information and the name of your nearest Distributor, write

STANDARD OIL COMPANY OF CALIFORNIA

225 Bush Street, San Francisco 20, California

The California Oil Company
Barber, New Jersey

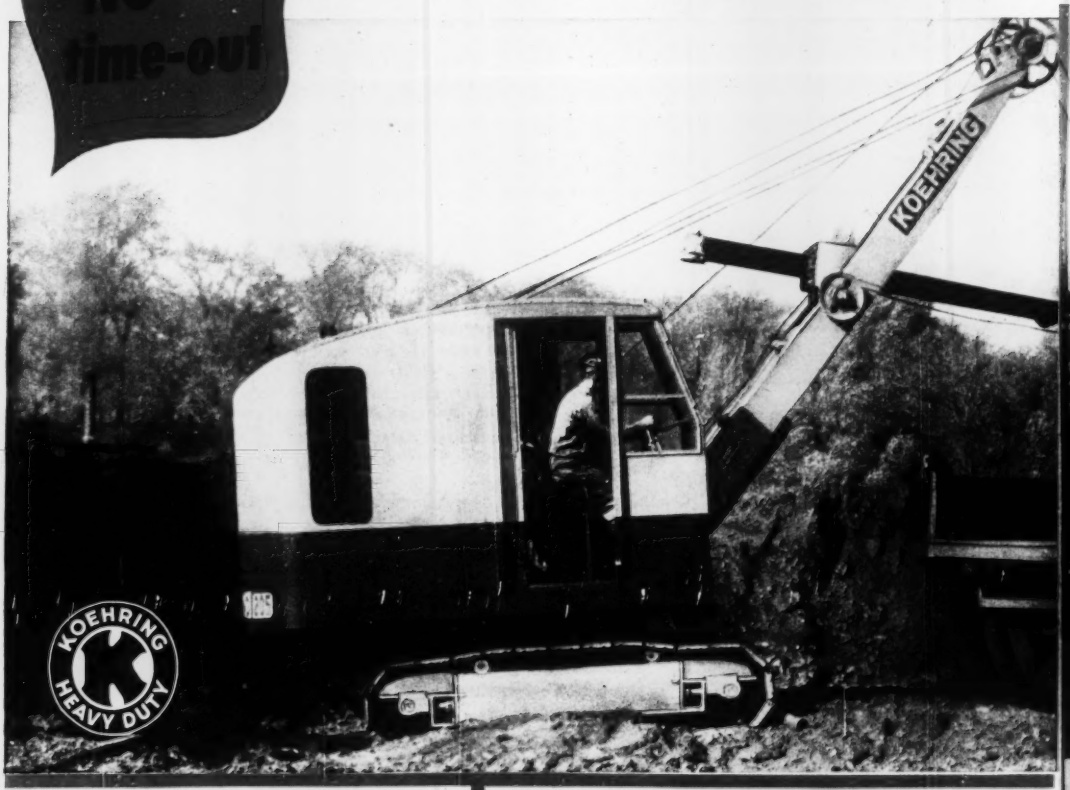
The California Company
17th and Stout Streets, Denver 1, Colo.

Standard Oil Company of Texas
El Paso, Texas

RPM

Trademark Reg. U.S. Pat. Office

NO time-out for CLUTCH ADJUSTMENTS

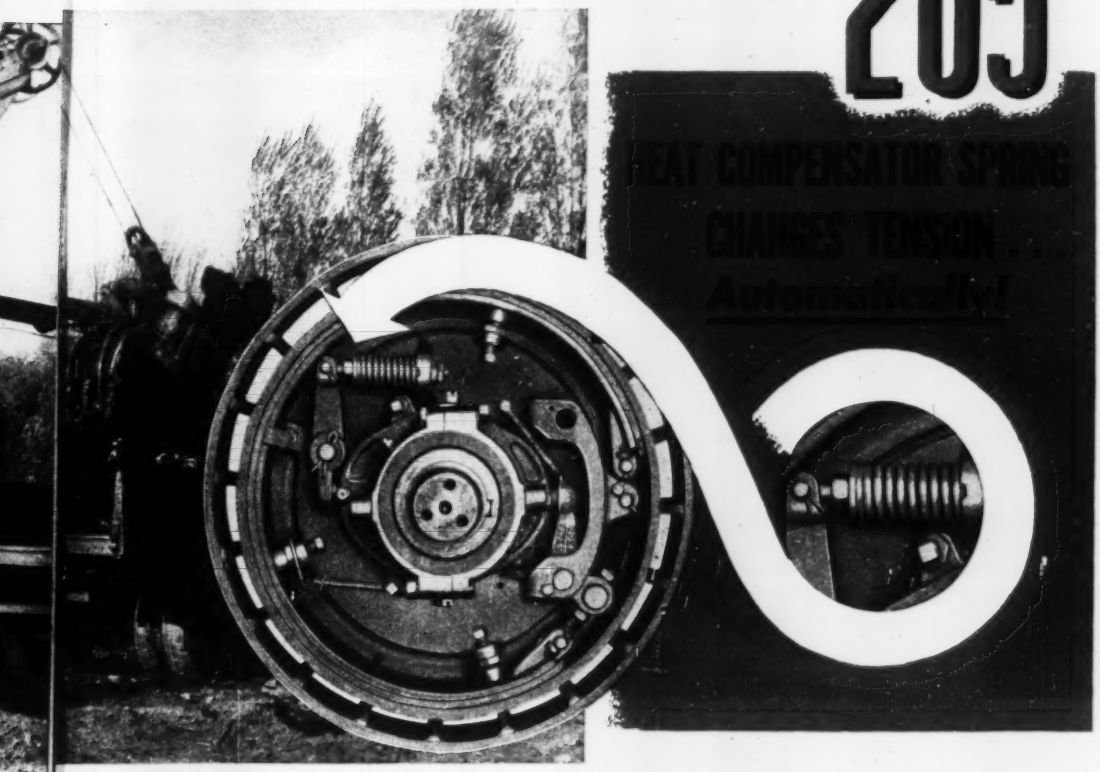


KOEHRING DUMPTORS* have the same heavy-duty qualities and big-production ability as Koehring excavators . . . combined, they give you matched excavating-hauling efficiency. Rugged 6-yard rock body . . . plus a ton of Dumptor strength for every ton of payload, withstand severest shocks of shovel loading and roughest off-road hauling. Constant-mesh transmission and 3 fast speeds, forward and reverse, provide no-turn shuttle hauling. 1-second gravity dump saves more time every trip.

*Trademark Reg. U. S. Pat. Off.

KOEHRING COMPANY
Milwaukee 10, Wisconsin
***Subsidiaries:* JOHNSON • PARSONS • KWIK-MIX**

with KOEHRING HALF-YARD 205

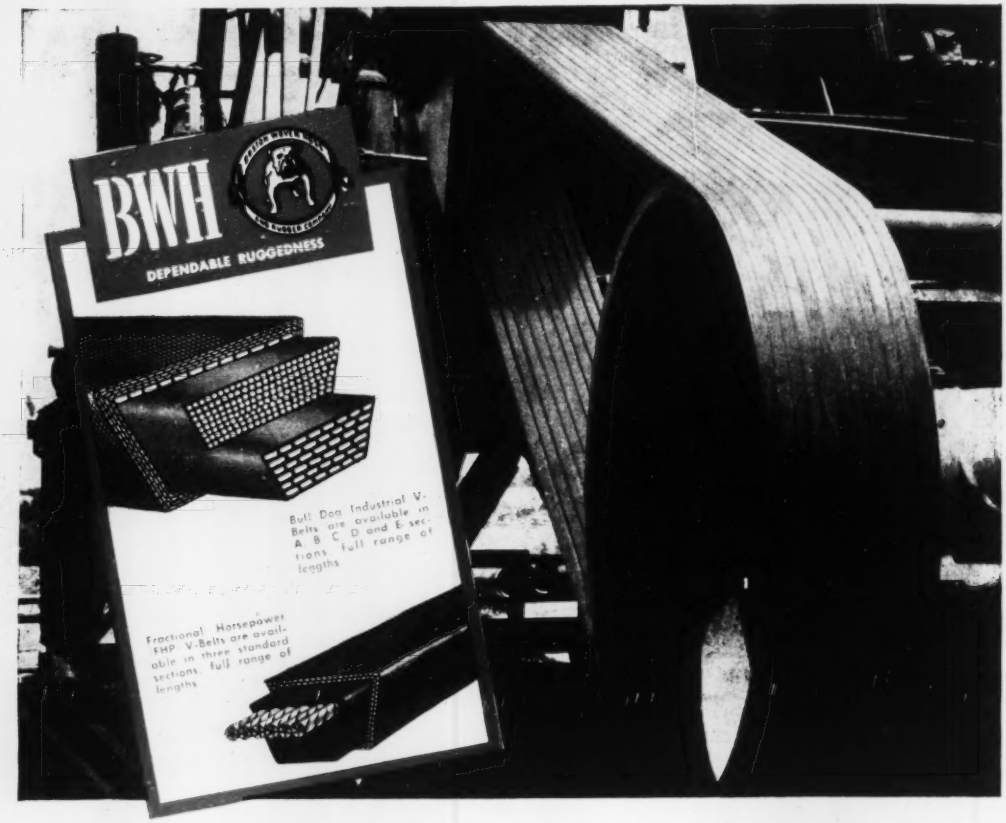


With Koehring ½-yard 205, there's no time-out for continuous manual clutch adjustments. It's no longer necessary for operator to tighten cold clutches when he starts in the morning, or between shifts . . . then loosen them again when clutches warm up. Large compensator springs on the 205's main drum (above), swing and traction clutches automatically make all tension changes . . . maintain full clutch efficiency. No "compromise" settings . . . you get top production all through the shift . . . have accurate, smooth control at all times. Gives you bigger daily yardage as shovel, dragline or pull shovel . . . is equally important on clamshell and heavy lift crane service, where you have intermittent usage.

Also, with Koehring 205 you get double-fulcrum control linkage on crowd-retract and traction that eliminates overtravel, drag and chatter . . . independent traction, to travel, swing and operate boom all at same time . . . full choice of crawler, truck or cruiser mounting to best fit your operating requirements. Your local Koehring distributor can show you many other 205 features that will save time and assure more production at lower cost on *your* work. See him *today*.

K900

OTHER KOEHRING EXCAVATOR SIZES: ¾ yd. 304 • 1½ yd. 605 • 2½ yd. 1005


BWH
DEPENDABLE RUGGEDNESS
Bull Dog Industrial V-Belts are available in A, B, C, D and E sections, full range of lengths
Fractional Horsepower FHP V-Belts are available in three standard sections, full range of lengths

LESS SLIPPAGE! COOLER RUNNING! LONGER LASTING!

NO WONDER THERE'S INCREASING DEMAND FOR

RUGGED BULL DOG V-BELTS

On tough jobs where a dependable V-Belt drive is of utmost importance, operators today are specifying Bull Dog V-Belts.

These new BWH "titans" have consistently proved they deliver the kind of steady, trouble-free service that speeds production and slashes maintenance costs.

Here's why there's less slippage with Bull Dog V-Belts, fewer shutdowns for adjustments, greater long-term economy in their use:

1. *Exclusive Bull Dog Cord Section Has Higher Tensile Strength,* able to carry the load and absorb shock.

2. *Low Stretch,* because exclusive Bull Dog Cords are processed in a new way. As a result, there's less slippage, fewer adjustments, longer belt life.

3. *Cool Running,* thanks to quality-controlled compounds developed in BWH laboratories, which do not crack or deteriorate under the most severe flexing.

4. *Wear-Resistant Covers* of heavy, bias-cut fabric, to protect heart of belt from dirt, grease and moisture.

Bull Dog V-Belts are one of many famous products manufactured by BWH. When you need industrial rubber goods, look to BWH for products of dependable ruggedness, to BWH distributors for dependable service.

HAVE YOU A JOB WHERE STAMINA COUNTS?
Bring us your toughest problems. We're specialists in solving them. Consult your nearby BWH distributor or write us direct.

Another Quality Product of

BOSTON WOVEN HOSE & RUBBER COMPANY

Distributors in all principal cities

PLANT: CAMBRIDGE, MASS., U. S. A. • P. O. BOX 1071, BOSTON 3, MASS.

CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

ELSIE EAVES, Manager *J. A. MAHONEY, Reports* *M. R. ROESSLER, Statistics*

WATER SUPPLY

BIDS ASKED

April 14

Minn., Bigfork—Village, C. L. Allender, clk., City Hall, water supply and distr. sys., incl. deep well, turbine pump pumphouses, 50,000 gal. wood or steel tank and tower, mains etc. $40,000. Plans deposit $10. Hitchcock & Estabrook, 521 Sexton Bldg., Minneapolis, engrs.

CONTRACTS AWARDED

Minn., Fisher—Village, M. A. Tangen, clk., Village Hall, water supply sys., to Nodland & Eby Co., Starbuck, **$54,295.** Bids 3/16. CD 3/9.

Tex., Houston—United Home Builders, Inc., 11002 Aldine-Westfield Rd., c.i. waterlines, facilities, in Westfield, Greenwood, Parkwold and Northmount Estates, own forces. **$65,000.**

SEWERS, WASTE DISPOSAL

BIDS ASKED

April 8

N. C., Lenoir—City, Earl Tate, mayor, City Hall, sewer line imprvs. Plans deposit $10. C. C. McGimsey, Lenoir, engr.

May 17

N. Y., Mineola—Bd. Supervs. Nassau Co., Old Courthouse, Franklin Ave., sewage treatment plant at Bay Park. Plans deposit $50. CD 5/24/44—ENR 6/1/44.

LOW BIDDERS

Calif., Watsonville—City, City Hall, Mar. 22, installing outfall pipeline, from Grainite Constr. Co., Box 900, Watsonville, **$53,160.** CD 2/17—ENR 2/24.

Ill., Livingston—Village, Antoine Karnosky, mayor, Mar. 7, sanitary sewer extens., imprvs., from General Buildings Constr. Co., 216 N. 7 St., Springfield, **$92,000.**

Nev., Las Vegas—City, City Hall, Mar. 22, sewage treatment plant and approach outfall sewer, from Pitzgerald Constr. Co., 645 E. Broadway, Long Beach, Calif., **$557,000.** Ralph O'Neil, 233A S. Brand St., Glendale, Calif., engr.

CONTRACTS AWARDED

●**Pa., Phila.**—Dpt. P. Wks., City Hall Annex, East Central Schuylkill Intercepting Sewer to Square Constr. Co., 115 S. Haven St., Baltimore, Md., **$1,379,090.** Bids 3/11. CD 3/24—ENR 3/31, under LB.

S. C., Taylors—Southern Bleachery & Paint Works, Taylors, treatment plant and sewer lines, to Peden Constr. Co., Greenville. **$58,246.**

Tex., Houston—United Home Builders, Inc., 11002 Aldine-Westfield Rd., sanitary and storm sewers, in Westfield, Greenwood, Parkwood and Northmount Estates, own forces. **$90,000.** CD 3/24.

BRIDGES

BIDS ASKED

April 18

Massachusetts—Mystic River Bridge Auth., 6 Beacon St., Boston, Zone 8, Contr. 9, toll plaza and administration office, Mystic River Bridge. Plans deposit $15. Charles A. Maguire & Assoc., 46 Cornhill, Boston, Zone 8, and J. E. Greiner Co., 1201 St. Paul St., Baltimore, 2, Md., engrs. CD 9/4/47—ENR 9/18/47.

About May 1

Ind., Anderson—City, City Hall, rebuilding part Wheeler Ave. Bridge, $55,000. J. O'Connor, city engr.

LOW BIDDERS

Michigan—State Hy. Dpt., Lansing, Mar. 24, rein.-con., steel bridge carrying U. S. 12 (relocated) over Grand River, Grand Trunk Western R. R. and New York Central R. R., 0.2 mi. north of Jackson. UBI and UXI 38-1-14 CI, Jackson Co., from Jutton-Kelly Co., 13240 Alber Ave., Dearborn, **$588,111;** grade separation carrying Central Ave. over Edsel Ford Expressway, incl. pumping plants, in Detroit, UI B19 of 82-2210 CI and UI D5 of 82-22 C3, Wayne Co., from Louis Garavaglia, Centerline, **$312,602.** CD 3/9—ENR 3/17.

Pa., Phila.—Dpt. P. Wks., City Hall Annex, Mar. 18, South St. bridge west approach reconstruction, from Robert E. Lamb & Son, Inc., 3429 W. Indiana Ave., **$210,000.** CD 3/1—ENR 3/3.

South Dakota—State Hy. Comn., Pierre, Mar. 22, one twin, 12 x 12 x 36 ft., and one twin 10 x 6 x 24 ft., rein.-con. box culverts; one 196 ft. composite I-beam viaduct S 260 (11), Hughes Co., from Bonesteel & Hyde, Inc., Rapid City, **$60,884.** CD 3/11.

STREETS AND ROADS

BIDS ASKED

April 13

N. C., Thomasville—City, R. M. Cooksey, mgr., City Hall, street paving and incidental underground work. Wm. C. Olsen, 5 Exchange Pl., Raleigh, engr.

LOW BIDDERS

Louisiana—State Hy. Dpt., Baton Rouge, Mar. 23, b. conc. 8.166 mi. Oakdale Elizabeth Hy. and Elizabeth Loop Rd., State Rts. 22, 151, 22 D. S. F. 309-04-10 and 188-03-02 and 802-11-01, F.A.S.P. S. 309(3), Allen Parish, from Barber Bros. Co., Reymond Bldg., Baton Rouge, **$173,060***aggregate surf., ten 40 ft. I-beam span bridge, etc. Sulphur-De-Quincy Hy., State Rt. 104, S. P. 31-06-07, Calcasieu Parish, from T. L. James & Co., Ruston, **$224,997.** CD 2/23—ENR 2/24***grading, drainage structures, rein.-con. deck girder bridges, bit. paving, 6.367 mi. Many-Pendleton Hy., State Rt. 6, S. P. 34-0212, F.A.P. F 150 (3), Sabine Parish, from Wells Constr. Co., Natchitoches, **$437,256.** CD 3/2—ENR 3/10.

Michigan—State Hy. Dpt., Lansing, Mar. 22, bit. aggregate surf. 16.205 mi. M-28 F 66-12 C6; F 66-14 C7; F 66-14 C8; M66-14 C6, F 66-23 C13, Houghton Co., from Thornton Constr. Co., Hancock, **$181,437***bit. aggregate surf. course Class F1, 4.984 mi. M 94, SS 75-40 C2, and partial grade lift, grade wid'n., aggregate surf. course, bit. aggregate surf., 3.326 mi. M 75-42 C1, Schoolcraft Co., from Paul C. Miller, Comstock Park, **$137,424***b. conc. 12.589 mi. M 28, M 75-9 05; F 75-9 C5, F 48-2 C15, F 48-26 C3, F 2-17 C 10, Schoolcraft, Alger and Luce Counties, from Payne & Dolan, Inc., 1138 First Wisconsin National Bank Bldg., 735 N. Water St., Milwaukee, Zone 2, Wis., **$239,492.** CD 3/16.

Michigan—State Hy. Dpt., Lansing, Mar. 24, grading, drainage structures 3.19 mi. M-97 Mt. Clemens West Belt, F 50-22 C1, Macomb Co., from Louis Garavaglia, 24240 Mound Rd., Centerline, and Denton Constr. Co., 7-170 General Motors Bldg., Detroit, Zone 2, **$274,165,** CD 3/9—ENR 3/17***b. conc. 1.146 mi. U. S. 12, from Pennsylvania R.R. to Goddard Rd., in New Buffalo, M 11-7 C6, and b. conc. 2.327 mi. U. S. 31 and U. S. 33 from southeast and northwest of Scotdale, M 11-12, C3, Berrien Co., from John Yerington, Benton Harbor, **$88,288***** grading, draining 1.54 mi. county road from U. S. 127 north to Jolly Rd., CS 33-70 C1, Ingham Co., from John & Paul Gillisse, Grandville, **$52,847***b. conc. 3.082 mi. U. S. 24 from Pennsylvania R.R. to Goddard Rd., M 82-72 C 12, Wayne Co., from Cooke Contg. Co., 1116 Penobscot Bldg., Detroit, Zone 26, **$135,126***1.393 mi. U. S. 25 from Outer Dr., northeast to Schaeffer Rd., M82-3 C 14, Wayne Co., from Detroit Asphalt Paving Co., 702 Transportation Bldg., Detroit, Zone 26, **$52,-051.** CD 3/16.

Pa., Phila.—Dpt. P. Wks., City Hall Annex, Mar. 18, paving various locations, Schedules, B1, B2, B3, B4, C1, C4, C5 and C6, from Eastern Asphalt Co., Packard Bldg., **$80,971;** Schedule C-3, from Frank Mark Co., Custer Ave. and Wingohocking St., **$116,592.** CD 3/9.

South Dakota—State Hy. Comn., Pierre, rejected bids Mar. 22, base course 7.125 mi. F-265 (5), Tripp Co., L.B. **$84,325;** base course 12.878 mi. F 265 (9), Tripp Co. L.B. **$143,729.** CD 3/11.

South Dakota—State Hy Comn., Pierre, Mar. 22, base course 10.718 mi. Proj. F 467 (2), Perkins Co., from W. H. Noel Co., Jamestown, N. D., **$199,623***grading 11.133 mi. Proj. S 225 (2), Hamlin Co., from S. E. Gustafson Constr. Co., 7 Lacotah Bldg., Sioux Falls, **$104,800***grading 9.97 mi. Proj. S 225 (3), Clark and Hamlin Counties, from J. H. Backman Constr. Co., 1730 S. 10 St., Sioux Falls, **$98,825***grading 11.89 mi. Proj. S 260 (11), Hughes Co., from Holzworth Constr. Co., Miles City, Mont., **$152,858***base course 10.982 mi. Proj. S 236 (3), Perkins Co., from Peter Kiewit Sons Co., 1024 Omaha Natl. Bank Bldg., Omaha, Neb., **$163,955.** CD 3/11.

CONTRACTS AWARDED

Ark., Booneville—City, paving 8 mi. streets, to Davies & Davies Constr. Co., Pyramid Bldg., Little Rock, **$133,578.** Bids 3/19, awarded 3/18. CD 3/1—ENR 3/3.

Tex., Houston—United Home Builders, Inc., 11002 Aldine-Westfield Rd., streets and roads, Westfield, Greenwood, Parkwood and Northmount Estates, own forces. **$100,000.** CD 3/24.

Woodstock—Oxford Co., Woodstock, grading 23 mi., stone surf. 23 mi., drainage and grading 17.5 mi., day labor, Approx. **$78,170.** J. N. Moathrell, co. engr. CD 7/30/43—ENR 8/5/43.

EARTHWORK, WATERWAYS

BIDS ASKED

April 27

†Arkansas — U. S. Eng., P.O. Box 97, Memphis 1, Tenn., placing approx. 95,000 cu. yd. earth and installing 3 corrugated metal pipe drainage structures in White River Levee Dist., Woodruff, Jefferson, Augusta, Monroe and Prairie Counties, Serial No. Eng. 440-041-49-118.

LOW BIDDERS

†Texas—U. S. Eng., 606 Santa Fe Bldg., Galveston, Mar. 23, dredging 5½ mi. Houston Ship Channel from Greens Bayou to vicinity of Clinton from Atlantic Gulf & Pacific Co., 15 Park Row, New York, N. Y., **$373,973.** Est. $275,000. CD 3/2—ENR 3/10.

CONTRACTS AWARDED

Minn., St. Peter—Nicollet Co., H. Overn, aud., County Ditch 75, to J. Needles, Greenfield, Ia. Approx. **$45,306.** Bids 2/11. CD 2/2.

N. J., Longport—New Jersey Dpt. Conservation, State House Annex, Trenton, dredging, bulkhead repairs, Broad Thorofare, to Hill Dredging Co., 5601 Atlantic Ave., Ventnor, **$32,264.** CD 1/3/47—ENR 1/23/47.

●**†Tennessee** — U. S. Eng., P.O. Box 97, Memphis, Zone 1, furnishing approx. 120,000 squares articulated concrete mattress, Gates Landing, Tenn., Casting Field, Eng. 40-041-49-104, to Weymouth Constr. Co., 2714 Person Ave., Memphis, **$1,047,600.** Bids 3/9. CD 2/14—ENR 2/17.

AIRPORTS AND AIRBASES

BIDS ASKED

April 18

Minn., Fergus Falls—AIRPORT IMPRVS.—City, I. Mickelson, clk., City Hall, grading, draining, surf. seeding, etc., municipal airport. Approx. $50,000. Plans deposit $5. Toltz, King & Day, 1509 Pioneer Bldg., St. Paul, engrs. CD 2/14/44—ENR 10/5/44.

PUBLIC BUILDINGS

BIDS ASKED

April 13

Tenn., Bristol — Sullivan Co., Bristol, 2 schools. R. V. Arnold, 104½ 6 St., archt.

About April 15

Ind., Anderson—Anderson School Bd., Anderson, elementary, junior, and kindergarten school, $800,000. Miller & Henning, Anderson Bank Bldg., archts. CD 1/26/45—ENR 2/1/45.

April 18

†N. Y., Floral Park—Pub. Bldgs. Admin., 731 Customs House, New York; Zone 4, misc. repairs to post office. **FWA.**

April 20

N. C., Kinston—North Carolina Hospitals Bd. Control, Roy M. Purser, genl. mgr., Raleigh, two 167x300 ft. colony bldgs. for

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $28,000; other public works $50,000; industrial buildings $68,-000; other buildings $250,000.

Classes of Construction

(Name in order of Listing)

Water Supply	**Latin America**
Sewers, Waste Disposal	**Public Buildings**
Bridges	**Commercial Buildings**
Streets & Roads	**Industrial Buildings**
Earthwork, Waterways	**Unclassified**

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

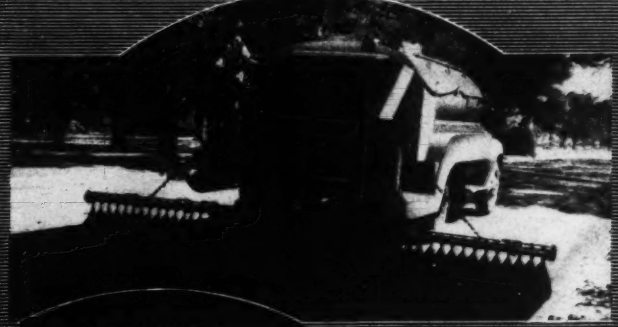
CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

†	Federal Government
●	Project of $1,000,000 or over.
ENR	Engineering News-Record
CD	Engineering News-Record Construction Daily

NO TIME LOST!
LOADING OR LAYING ITS LOAD



A STANDARD STEEL PRESSURE DISTRIBUTOR GIVES EQUAL CIRCULATION THROUGHOUT THE SPRAY BAR FOR A UNIFORM SURFACE FROM CURB TO CURB FOR LONGER WEAR

STANDARD STEEL
PRESSURE DISTRIBUTOR

The Model 424 can be loaded in quick time for a "fast getaway". A two-way cleaning system guarantees a clean spray bar at the end of the day. First, the material is sucked out of the bar and back into the tank. Then by turning one small valve, cleaning solvent is released into pump and spray bar (without contaminating the asphalt in the tank). No time lost in loading — no time lost in tinkering — Standard Steel 424 keeps going all day long far ahead of the "gravel gang"

WRITE FOR CATALOG 424

OTHER PRODUCTS OF STANDARD STEEL

Maintenance Distributors, Tar Kettles, Patch Rollers, Supply Tanks, Tool Heaters, Asphalt Tools, Street Flushers, Construction Brooms.

Built to the Highest Standard

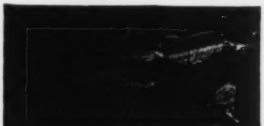
Standard Steel Works NORTH KANSAS CITY, MO

ENGINEERING NEWS-RECORD READERS CORDIALLY INVITED

Florida's West Coast

BOCA GRANDE HOTEL and CLUB

BOCA GRANDE, FLORIDA
(100 miles south of Tampa)



All Buildings Modern Brick Construction

Facing Gulf of Mexico. Providing relaxation, world-famed fishing, 2 mile private beach, golf, shelling, superb cuisine, combined with finest modern accommodations. American Plan only. Distinguished Clientele. 18th Season same ownership, Joseph Spadaro, Owner-Gen. Mgr.

- Club Open • Dec.-June • Double with bath $24—$26; Single $16—$18, daily.
- Hotel Open • Jan.-April • All outside rooms with private tile bath and shower.
- Double room $30 daily and up-Single occupancy $22 daily and up.

Ask for Folder E

Information—Reservations

Wire or write—Boca Grande Hotel—Tel. Boca Grande 4251, or
N. Y. OFFICE—Edith L. Turner, Rep., 51 E. 42 St., MUrray Hill 2-3341 or 8442

Caswell Training School. Plans deposit $3(general constr. $15 for heating, plumbing and electrical work. Eric G. Flannagan, Box 891, Henderson, archt. W. M. Wallace, II, 126 E. Parrish St., Durham, engr. CD 3/24—ENR 3/31.

April 21

N. Y., Candor—Bd. Educ., Central School Dist. 1, Candor, high and grade school addn. $250,000. Sargent, Webster, Crenshaw & Foley, 2112 Erie Blvd., East Syracuse, archts. ENR 12/6/45.

LOW BIDDERS

O., Findlay—Bd. Educ., Findlay, Mar. 24, general contract, 2 schools, from Monser Constr. Inc., Fremont, **$343,700.** CD 3/3—ENR 3/10.

Okla., Norman—Bd. Affairs, Capitol, Oklahoma City, Zone 5, cancelled bids to have been opened Mar. 24, dining hall and remodeling 3 ward bldgs. at Central Oklahoma State Hospital. **$700,000.** CD 3/18.

Tenn., Union City—Obion Co., Union City, Mar. 21, hospital, from Gardner Constr. Co., 711 Allison St., Nashville. **$373,000.** CD 3/8—ENR 3/10.

Va., Hampton—City, Mar. 23, Hampton High School addns., alterations, from Thornton Constr. Co., 205 E. Canal St., Richmond, **$347,982.** Williams, Cole & Blanchard, Newport News, archts.

CONTRACTS AWARDED

Fla., Gainesville—State Bd. Control, Tallahassee, electrical engineering bldg., at University of Florida, to J. A. Jones Constr. Co., 209 W. 4 St., Charlotte, N. C., **$549,000.** Bids 3/25. CD 3/15—ENR 3/17.

Ga., Atlanta—Fulton Co. Bd. Educ., Courthouse, E. Rivers School, to Brittain & Pattillo Co., 103 Sycamore St., Decatur, **$432,000.** Bids 3/22. CD 3/2—ENR 3/10.

Ga., Macon—Bibb Co., Macon, A. L. Miller Junior High School, to Amerson & Freeman, Macon, **$288,500.** CD 7/2/47—ENR 7/24/47.

Minn., Blue Earth—City, W. Enger, clk., City Hall, general contract 2 story municipal hospital, to Lovering Constr. Co., 616 Guardian Bldg., St. Paul, **$262,200.** Bids 3/15. CD 2/24—ENR 3/10.

●**N. Y., Mt. Vernon**—Municipal Housing Auth., 22 W. First St., general contract housing, to John A. Johnson Constr. Co., 268 41 St., Brooklyn. Zone 32. **$3,024,000***** electrical work, to Arc Electrical Constr. Co., Inc., 739 Second Ave., New York, Zone 16. **$208,400***** plumbing, to L. Michael Plumbing & Heating Corp., 2243 Washington Ave., New York, Zone 57. **$143 200***** heating and ventilating, to Caruso-Sturcey, 10 Fisk Pl., Mt. Vernon, **$228,444.** Grand total $3,904,044. Bids 3/10. CD 2/24—ENR 3/3.

O., Kent—Kent State University, George A. Bowman, pres., Kent, men's physical education bldg., to Western Reserve Constr. Co., Warren, **$905,572.** Bids 3/23. CD 2/24—ENR 3/3.

O., Warren—Bd. Educ., L. O. Wurtemberger, bus mgr., Warren, Horace Mann School, Austin Ave., to Warren Eng. Co., Warren, **$251,171.** Wranded 3/23. Arthur F. Sidells, 310 Perkinswood Blvd., N. E., archt.

●**Pa., State College**—Pennsylvania State College, State College, 3 men's dormitory bldgs., to Henry E. Baton, Inc., 1717 Sansom St., Phila., **$4,000,000.** Bids 3/9. CD 2/17—ENR 2/24.

Wyo., Sheridan—School Dist. 7, Sheridan, general contract story, 129x143 ft., brick, concrete gymnasium at Sheridan High School, to Riedesel & Low Co., Cody, **$255,950.** Bids 3/23. CD 2/15—ENR 2/17.

COMMERCIAL BUILDINGS

BIDS ASKED

April 18

N. Y., New York—Montefiore Hospital, Gun Hill Rd. and Bainbridge Ave., (selected list bidders) hospital addn. Shuman & Lichtenstein, 269 Lexington Ave., archts.

●**N. Y., Syracuse**—Syracuse University, c/o Business Mgr., Administration Bldg., gymnasium. $2,000,000. Lorimer Rich & Robbins Conn, 215 Montague St., Brooklyn, archts. CD 11/15—ENR 11/18.

SOON LETS CONTRACT

April 12

Ala., Birmingham—Park Manor Apts., c/o Pembleton & Mims, archts., Title Guarantee Bldg., soon lets contract 90 apartment units. Approx. $250,000.

●**N. Y., New York**—New York Hotel Trades Council & Hotel Assoc. of New York, 226 W. 47 St., Zone 19, soon lets contract altering, converting Y.M.C.A. bldg. into Health Center. $1,000,000. Skidmore, Owings & Merrill, 5 E. 57 St., Zone 22, archts.

N. Y., Rochester—Treasurer's Office, Rochester University, 15 Prince St., soon lets contract medical school and research laboratory. Approx. $250,000. Kaelber & Waasdorp, 311 Alexander St., archts.

LOW BIDDERS

Ala., Birmingham—Vanderbilt Garden Apts., c/o low bidder, Mar. 22, 118 apartment units, from J. H. West, 4210 1 Ave. N. Approx. **$250,000.** CD 3/21—ENR 3/24.

Ark., Crossett—Crossett Health Foundation, Crossett, Mar. 15, health center, from William Peterson, Commercial Natl. Bank Bldg., Little Rock. **$657,900.** CD 3/1—ENR 3/10.

Tenn., Memphis—Poplar Highlands Plaza, Inc., c/o Everett Woods, archt., 81 Madison Bldg., theater, from Foster-Creighton Co., American Natl. Bank Bldg., Nashville. **$347,765.** CD 3/4—ENR 3/10.

Va., Richmond — Ginter Park Methodist Church, Seminary and Laburnum Aves., Mar. 24, church, from James Fox & Sons, Inc., 2501 E. Franklin St., **$262,500.** CD 11/18—ENR 12/6.

CONTRACTS AWARDED

Ga., Atlanta—Citizens & Southern National Bank, c/o contractor, bank, 10 St., to Beers Constr. Co., 70 Ellis St. N.E. Approx. **$250,000.** Bids 12/15. CD 11/29—ENR 12/2.

●**Ga., Atlanta** — The Darlington Corp. of Georgia, c/o William G. Lyles, Bissett, Carlisle & Wolff, assoc. archts., 1302 Main St., Columbia, S. C., and Stevens & Wilkinson, 157 Luckie St., Atlanta, 14 story apartment, incl. 612 units, to Long Constr. Co., c/o archts. Approx. **$5,550,000.**

Ga., Doraville—Roy D. Warren Co., Mortgage Guarantee Bldg., Atlanta, 48 homes. Owner builds. Approx. **$300,000.**

●**La., Baton Rouge**—Brooktown Homes, c/o contractor, 400 homes, to The Crawford Corp., 2019 N. 3 St., Baton Rouge. Approx. **$1,000,000.**

La., New Iberia—Hotel Frederic, New Iberia, hotel addns., alterations, to Milton F. Herpeche, New Iberia. Approx. **$250,000.**

La., Springhill—J. C. Shepherd, 837 Jefferson Pl., Shreveport, 80 homes. Owner builds. Approx. **$300,000.**

Mo., Jennings (St. Louis, Zone 20, P.O.)—Milton Constr. & Supply Co., 5886 Easton Ave., Zone 12, forty-four 1 story, 26x48 ft. brick houses, concrete fdns., Halls Ferry Rd., Chain of Rocks Rd., Hathaway Dr., Bagley Dr., Dickerson Dr., and Edgewater Dr., separate contracts. **$431,200.**

Mo., Kirkwood (St. Louis, Zone 22, P.O.)—Southwestern Bell Telephone Co., c/o G. J. Vande Steeg, engr., 1010 Pine St., St. Louis, Zone 1, 2 story, bsmnt., 63x121 ft. rein.-con., steel, brick telephone exchange, altering existing structure, etc., to H. B. Deal & Co., Inc., 1218 Olive St., St. Louis, Zone 3. Bids 2/23. CD 2/15—ENR 2/17.

●**Mo., St. Louis and St. Louis Co.**—Schuermann Building & Realty Co., 5934 Natural Bridge Ave., St. Louis, Zone 26, one hundred fifteen 1 story, bsmnt., frame dwellings, concrete fdns., Hanley Hills Addn. 1; one hundred seventy-three 1 story, bsmnt., frame dwellings, concrete fdns., Hanley Hills Addn. 2, east side Hanley Rd., St. Louis Co., twenty 1 story, bsmnt., brick, concrete residences, Melvin and Frederick Aves. and Riverview Blvd., northern part city, separate contracts. **$1,800,000.**

Mo., St. Louis—Fairmount Investment Co., c/o Fairmount Hotel, Maryland and Euclid Aves., Zone 8, six 1 story, bsmnt., 80x150 ft., solar styled retail shops, addn. to Fairmount Hotel, Maryland Ave., to M. Shapiro, 400 Alta Dena Court, Zone 5. Approx. **$250,000.** Benjamin Shapiro & Robert Tisdale, 702 Chestnut St., Zone 1, archts. CD 10/14—ENR 10/21.

●**N. J., Moorestown**—Col. Charles Casale, 428 S. Fernwood Ave., Pitman, residential development, Rt. No. 38, separate contracts. **$1,500,000.**

●**O., Cincinnati**—Allen Metzger, 414 Walnut St., 180 two story, bsmnt., brick apartments, to John A. Johnson & Son, Inc., 81 Nelson Pl., Columbus. **$7,000,000.** Awarded 3/20. CD 3/25.

O., Youngstown—West Side Homes, Inc., C. F. McCall, pres., Stambaugh Bldg., 50 homes, Winchester, Moherman and S. Osborne Aves. Owner builds.

Okla., Oklahoma City — Catholic Diocese, 1208 N. Shartel St., Zone 3, old peoples residence hotel for Catholics, N.W. 19 and Portland Sts., to Dennehy Constr. Co., 514 W. Noble St., **$301,858.** Est. $300,000. Awarded 3/23. CD 3/3—ENR 3/17.

●**Pa., Clearfield**—Clearfield Hospital, Clearfield, (1st unit), 4 and 5 story, bsmnt., brick, steel hospital, to Crumm, Inc., 4021 Bigelow Blvd., Pittsburgh. **$1,219,718.** Bids 2/21. CD 3/1—ENR 3/10, under LB.

Pa., Cynwyd—Sylvan S. Levy, 1636 Walnut St., Phila., apartment, Conshohocken State Rd., separate contracts. **$300,000.**

●**Pa., Drexel Hill**—James-Lewis Corp., 252 Long Lane, Upper Darby, residential development, Steel Rd. and Cornell Ave., to State Bldg. Constr. Co., 252 Long Lane, Upper Darby. **$1,070,000.** David Slott, 7060 Garrett Rd., Upper Darby, archt.

Pa., Horsham—Ernest Husen, 410 N. Easton Rd., Willow Grove, residential development, County Line Rd., separate contracts. **$400,000.**

Pa., Lansdale — Land Sales Corp., Real Estate Trust Bldg., Phila., residential development, 2 St., etc., separate contracts. **$260,000.**

Pa., Phila.—Magee Constr. Co., 2534 W. Thompson St., residential development, Gilham St., to Louis Feldscher & Son, 2534 W. Thompson St., **$250,000.**

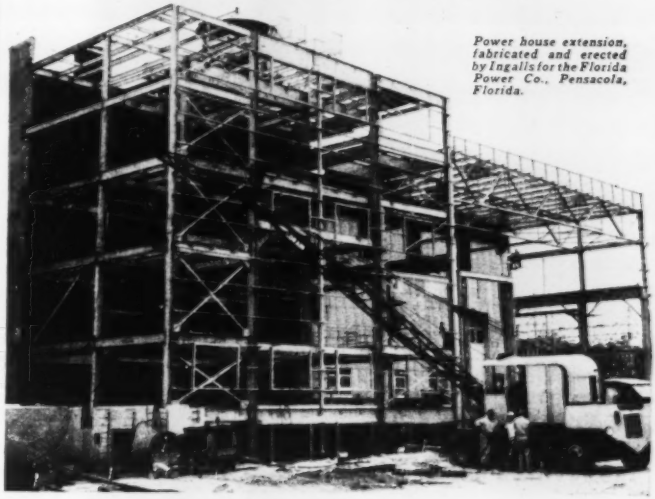
Pa., Phila.—Mas, Inc., 1121 N. 66 St., residential development, Kemball Ave., to Morris Park Constr. Co., 1121 N. 66 St., **$560,000.**

Pa., Phila.—Morris Park Constr. Co., 1121 N. 66 St., residential development, 19 St., separate contracts. **$400,000.**

Pa., Phila.—Powell-Ekins Co., 1310 Market St., residential development, Upsal St., separate contracts. **$250,000.**

Pa., Phila.—Wister Homes, Inc., 25 S. 59 St., residential development, Wister Ave., separate contracts. **$400,000.** I. W. Levin, 1531 Belmont Ave., archt.

Time Won't Tell on INGALLS STEEL



Power house extension, fabricated and erected by Ingalls for the Florida Power Co., Pensacola, Florida.

The years mean nothing to a structure built of steel. Come storm, come stress, steelwork stands against them all better than any other construction material. Especially is this so if you specify Ingalls steel, for then you know it is fabricated precisely to specifications. Let us quote on your requirements. Our years of experience and modern fabricating methods will save you time and money.

INGALLS

STRUCTURAL STEEL
PLATE WORK
WAREHOUSE STEEL
SHIPS • BARGES
STORAGE TANKS
STAINLESS STEEL VESSELS

THE INGALLS IRON WORKS CO., THE INGALLS SHIPBUILDING CORP., The Steel Construction Co., Birmingham Tank Co. Offices at BIRMINGHAM, Chicago, Pittsburgh, New York and New Orleans. Fabricating plants at Birmingham and North Birmingham, Ala., Verona, Pa., Pascagoula, Miss., and Decatur, Ala.

Pa., Whitehall Boro — J. A. Seitz, 1024 Prospect Rd., Pittsburgh, seven 2 and 3 story, bsmnt., 55x100 ft. U-shaped, brick veneer and solid masonry apartments, Prospect Park. Owner builds. Approx. **$750,000.** C. V. Blezard, 901 Ridge Ave., Pittsburgh, archt.

Tenn., Memphis—Boyle Trust & Investment Co., c/o contractor, department store, to Tri-State Constr. Co., Three Sisters Bldg. Approx. **$250,000.**

Tex., Houston—Best Home Builders, Inc., J. E. Leicher & Assoc., 3255 Rosedale St., 100 dwellings, off Old Spanish Trail and Holmes Rds., own forces. **$550,000.** CD 2/11—ENR 3/3.

Tex., Houston—R. C. West & Assoc., Citizens State Bank Bldg., addnl housing, west of Memorial Park., own forces. **$275,000.** CD 3/18—ENR 3/31.

Tex., San Antonio—C. L. Browning, Jr., Insurance Bldg., 150 economy type dwellings, south of St. Hedwig Rd. Owner builds. **$850,-000.** CD 3/29.

Tex., San Antonio—E. J. Burke & Sons, 4220 S. Zarzamora St., community center, parking garage and playgrounds, day labor, **$325,000.** CD 2/2—ENR 2/17.

Utah, Salt Lake City—El Kalah Temple, Masonic Temple, 650 E. S. Temple St., main structure of Intermountain Shriners Hospital for Crippled Children, to Olsen Constr. Co., 1549 S. 2nd West St. **$927,000.** Bids 12/18, awarded 3/21. CD 11/26—ENR 12/9.

Wash., Bellingham—St. Joseph's Hospital, Bellingham, 5 story, rein.-con. hospital addn., to General Constr. Co., 3840 Iowa St., Seattle, **$595,340.** Est. $500,000. Bids 2/25. CD 3/2—ENR 3/10, under LB.

●**Wis., Milwaukee**—Kalt Corp., 8328 W. Burleigh St., 1,000 one story 21x32 ft., frame houses, concrete block fdn. various parts of the city, to George S. Porter Constr. Co., 302 Enterprise Bldg., Denver 1, Colo., Approx. **$6,000,000.**

Ont., London—H. L. Sifton, 192 Sherwood Ave., forty 1 story, bsmnt., brick houses, Riverside Dr., own forces. **$400,000.**

Ont., Steep Rock Lake—Steep Rock Iron Mines Ltd., 25 W. King St., Toronto, housing, own forces. **$255,152.** CD 1/5—ENR 2/3.

Que., Amqui — Reverend Ursuline Sisters, Rimouski Normal School, to J. G. Dube, 83 St. Germain St., Rimouski, Approx. **$650,000.** E. Courchesne, 4749 Coolbrooke Ave., Montreal, archt. Leblanc & Montpetit, 513 Rachel St., Montreal, engr.

INDUSTRIAL BUILDINGS

BIDS ASKED

Pa., Phila. — GARAGE—Eglin Corp. of Penna., 1825 Market St., garage. $150,000. W. F. Silliman, 28 S. 18 St., archt.

●**Tex., Falfurrias**—PLANT, etc.—United Carbon Co., Odessa, carbon black plant, $1,000,000; gas pipeline gathering sys., $175,000. J. H. Alexander, c/o owner, engr. CD 2/3—ENR 2/17.

Tex., San Antonio—SERVICE STATION—Sinclair Refining Co., c/o R. D. Dixon, 1305 S. Laredo St., master type service station, Nogalitos, Rosslyn, S. Presa and Hampshire Sts. $75,000. CD 10/24/46—ENR 11/7/46.

Tex., Stinnett—PLANT—Stacey-Dresser Engineering Div. Dresser Interests, 1900 Superior St., Cleveland, O., desulfo plant. $500,000. CD 3/4—ENR 3/17.

SOON LETS CONTRACT

●**Calif., Los Angeles**—WAREHOUSE—Union Hardware & Metals Co., 411 E. 2 St. soon lets contract 1 story, 140x200 ft. and 3 story, 3 story, steel warehouse, office bldg., Ferguson Dr., East Los Angeles, $3,250,000. A. C. Martin & Assoc., 333 S. Beaudry St., Los Angeles, archts.

D. C., Wash.—LABORATORY, etc.— Abbott Merkt & Co., archts., 10 E. 40 St., New York, N. Y., soon let contract laboratory and office, for National Canners Assn., 18 and H Sts. N. W. $450,000.

La., New Orleans—SALES and SERVICE—Woodward, Wight & Co., c/o August Perey & Assoc., archts., Audubon Bldg., soon lets contract sales and service bldg. addns., alterations.

Minn., Rochester—PLANT—Marigold Dairies, R. Graupmann, mgr., Rochester, soon lets contract 2 story basement, 79x114 ft., rein.-con. plant, $126,000. M. & G. Buetow, 1931 University Ave., St. Paul, archts.

N. C., Winston-Salem — WAREHOUSE — Macklin & Stinson, archts. and engrs., 226 Trade St., soon lets contract 4 story warehouse addn. for Atlas Supply Co., 236 Liberty St.

N. Y., Jamaica—GENERATING STATION—Consolidated Edison Co. of New York, 4 Irving Pl., New York, soon lets contract electric generating station alterations, addns.

Pa., Phila.—MEAT HANDLING—Baltimore & Ohio R. R. Co., A. C. Clarke, ch. engr., Baltimore and Charles Sts., Baltimore, Md., soon lets contract meat handling bldg. $100,000.

●**Va., Richmond** — PLANT — Hinde-Dauch Paper Co., c/o Carneal & Johnston, archts., 1000 Atlantic Life Bldg., soon lets contract 313x428 ft. factory, stock storage, shipping platform; 2 story, 42x42 ft. offices, separate power house, incl. radial brick stack, structural steel framing, etc., air-conditioning, etc. $1,250,000. **(Correction—cost).** CD 3/28—ENR 3/31.

LOW BIDDERS

Miss., Picayune— PLANT—Picayune Coca Cola Bottling Co., c/o Hearon & McClesky, archts., Career Bldg., Hattiesburg, rejected bids Mar. 3, bottling plant. Will readvertise. CD 2/21. ENR 3/3.

Tex., Baytown—PLANT—Humble Oil & Refining Co., Baytown, rejected bids Feb. 10, plant locker units, 500 capacity, L. B. **$308,575.** CD 3/29, under LB.

Tex., Houston—WAREHOUSE, etc.—Houston Oil Field Equipment Co., 300 S. Wayside St., Mar. 10, warehouse and office, from Hubbard Constr. Co., 1507 Delano St., **$356,900.** CD 2/23—ENR 3/3.

CONTRACTS AWARDED

●**D. C., Wash.** — PLANT—The Washington Post Newspaper Co., 1337 E. St. N. W., newspaper plant, to John J. Mc Shin, Inc., Arlington, Va., **$1,000,000.** Bids 3/9. CD 3/1—ENR 3/10.

Ga., Atlanta—PLANT—Coca Cola Co., c/o contractor, bottling plant addn., to Van Winkle & Co., 506 Whitehead Bldg., Approx. **$100,000.** Robert & Co. Assoc., 96 Poplar St. archts.

●**Ga., Chamblee**—WAREHOUSE, etc.—John Deere Plow Co., c/o contractor, warehouse and office, to Henry C. Beck Co., First National Bank Bldg., Atlanta, Approx. **$1,000,000.**

Ill., Chicago — SUB-STATION — Commonwealth Edison Co., 72 W. Adams St., substation, 2350 N. Narragansett St., to Paschen Contractors, Inc., 2739 Elston St. Approx. **$210,000.** Holabird, Root & Burgee, 180 N. Wabash St., archts.

Ind., Anderson — PLANT—Nicholson File Corp., 32 and Lynn Sts., 80 and 200 ft. plant addn., to The Harry Kelley Constr. Co., 1807 Pearl St., Approx. **$100,000.** Bids 3/16. CD 3/11—ENR 3/17.

●**Mass., Salem** — PLANT—Salem Electric Lighting Co., 441 Stuart St., Boston, electric generating plant, separate contracts. **$10,000,-000.** United Engineers & Constructors, Inc., 1401 Arch St., Phila, Pa., engr.

Minn., Minneapolis — WAREHOUSE — Newhouse Paper Co., 515 Washington Ave. N., 1 story, 56x147 ft. warehouse addn., 1312 5 St. N., to W. A. South Co., 120 S. 10 St., **$68,000.** E. J. Becchetti, 125 S. 10 St., archt.

Miss., Laurel — SALES and SERVICE—Owner, c/o contractor, auto sales and service bldg., to L. A. Gilly & Sons, Laurel, Approx. **$68,000.**

Mo., St. Louis — WAREHOUSE—General Electric Co., H. S. Sherman, mgr., 1110 Delmar Blvd., Zone 1, 8 story concrete, brick service and warehouse bldg., East Rd. between Berthold and Wise Aves., to John Hill Constr. Co., Syndicate Trust Bldg., 915 Olive St., Zone 1.

●**O., Akron**—FACTORY—B. F. Goodrich Co., 500 S. Main St., 4 story, granite, steel factory, to Hughes-Faulkner Co., 1505 Race St., Phila., Pa., **$1,000,000.** Bids 3/4. CD 3/2—ENR 3/10.

O., Columbus—FACTORY—Columbus Plastic Products Co., 1625 W. Mound St., factory addn., to Columbus Constr. Co., 348 N. High St. Approx. **$70,000.** CD 2/28—ENR 3/10.

Pa., Altoona—MANUFACTURING—Altoona Enterprises, Inc., Commerce Bldg., 1 story, 160 x 320 ft., brick on concrete block backup, steel mfg. bldg., to J. C. Orr & Son, 7 Ave. and 5 St., Approx. **$200,000.** Blair Shirt Corp., 14 Logan Blvd., lessee. Hunter, Caldwell & Campbell, 3801 5 Ave., archts. CD 3/4—ENR 3/17.

Pa., Du Bois—PLANT— Pittsburgh Du Bois Co., Div. of Rockwell Mfg. Corp., 689 Liberty Blvd., 1 story, 51 x 67 ft., brick, steel gas meter mfg. bldg. addn., to Bert C. Skinner, 209 Washington Ave., Approx. **$100,000.** CD 10/21—ENR 11/4.

Pa., Phila.—ENGINE HOUSE—Baltimore & Ohio R. R. Co., A. C. Clarke, ch. engr., Baltimore and Charles Sts., Baltimore, Md., rebuilding engine house, to Hauser Constr. Co., 1909 Chestnut St., **$250,000.** CD 2/24—ENR 3/3.

Tenn., Memphis — WAREHOUSE—Liberty Cash Grocers Co., c/o contractor, warehouse and office, to William Culbreath Constr. Co., Porter Bldg., Approx. **$75,000.** Bids 3/12. CD 3/5—ENR 3/10.

Tex., Dallas—WAREHOUSE—Dallas Tailor & Laundry Supply Co., 411 S. Akard St., 1 story, irregular shape, masonry, brick, structural steel warehouse and plant, to Bock Constr. Co., 2323 Harris St., **$118,824.** Max M. Sandfield, 2907 Maple Ave., engr.

Tex., Port Neches—PLANT—B. F. Goodrich Rubber Co., 500 S. Main St., Akron, O., addnl. rubber mfg. plant expan., to Carruth Contg. Co., c/o A. E. Bishman, 5295 Port Arthur Rd., Beaumont, Approx. **$750,000.** Awarded 3/28. CD 10/8—ENR 10/28.

Tex., San Antonio—SERVICE STATION—Sinclair Refining Co., 1305 S. Laredo St., super service station, Fredericksburg Rd. and Hildebrand Ave., to Guy Hughes, Gunter Bldg., **$90,000.** CD 10/24/46—ENR 11/7/46.

Tex., Texas City—CHEMICAL PLANT—Carbide & Carbon Chemical Corp., Texas City, design and construction addnl. chemical plant expan., to Ford, Bacon & Davis, Texas City, Approx. **$600,000.** CD 10/13—ENR 10/28.

Wash., Seattle — FREIGHT TERMINAL — United Fruit Co., Olympic National Bldg., freight terminal, to General Constr. Co., 3840 Iowa St. Approx. **$90,000.**

Wis., Milwaukee — WAREHOUSE, etc. — Morley-Murphy Co., 434 N. Plankington Ave., Zone 3, 1 story, 190x320 ft., steel, brick, warehouse and office, concrete fdn., to Charles Maier & Son Co., 1633 N. 30 St., Zone 8. Approx. **$250,000.** A. L. & A. W. Seidenschwartz, 2104 N. 64 St., Wauwatosa, Zone 13, archts.

Ont., Owen Sound—PLANT—Fleming Publishing Co. Ltd., 865 Second Ave. W., 2 story, bsmnt., 60x100 ft. rein.-con. brick, concrete, steel plant and offices, Third Ave. and Ninth St. E., to Woodrich & Clark, 1099 First Ave. Approx. **$85,000.** Mathers & Haldenby, 15 St. Mary St., Toronto, archts.

●**Que., Shawinigan Falls**—PLANT—Canadian Industries Ltd., 1135 Beaver Hall Hill, Montreal, cellophane plant, Cloutier St., to Fraser Brace Eng. Co. Ltd., 360 St. James St., Montreal. Approx. **$4,000,000.** Irving R. Tait, ch. engr.

Que., Thetford Mines—SHAFT SINKING— United Asbestos Corp., Thetford Mines, shaft sinking and development on shores along Black Lake, Owner builds, Approx. **$200,000.** C. H. Shoemaker, c/o owner, engr. CD 5/17—ENR 6/10.

UNCLASSIFIED

BIDS ASKED

April 12

Kansas—RURAL DISTRIBUTION LINES—Flint Hills Rural Electric Co-operative, Council Grove, 340.83 mi. rural distr. lines, Geary, Morris, Dickinson, Chase, Marion and McPherson Counties. $350,000. Frank Horton & Co., Lamar, Mo., engrs.

Minnesota — RURAL DISTRIBUTION LINES — Mille Lacs Region Co-operative Power & Light Assn., Aitkin, 159 mi. rural distr. lines, Aitkin, Mille Lacs and Crow Wing Counties, Minnesota 81 F & G Aitkin, $125,000. Plans deposit $25. United Eng. Service, 600 Kasota Bldg., Minneapolis, engr.

April 15

Minnesota—RURAL DISTRIBUTION LINES —Minnesota Valley Co-operative, Light and Power Assn., Montevideo, 302 mi. rural distr. lines, Chippewa, Lyon, Yellow Medicine, Redwood, Lac qui Parle and Renville Counties, Minnesota 398 Chippewa, $200,000. Plans deposit $25. United Eng. Service, 600 Kasota Bldg., Minneapolis, engr. CD 10/23—ENR 11/18.

April 18

●**Manitoba** — POWER DEVELOPMENT — Minister Dpt. Mines & Natural Resources, Winnipeg, hydro-electric power development, Pine Falls, Winnipeg River, for Province of Manitoba. $15,000,000. Plans deposit $50. H. G. Acres & Co., 2135 Culp St., Niagara Falls, engrs. CD 11/29.

April 19

Alabama—RURAL DISTRIBUTION LINES —Sand Mountain Electric Co-operative, Ft. Payne, 240 mi. rural distr. lines, incl. 22 mi. 3 phase, 2 mi. conversion 1 to 3 phase, 1 mi. removal, 177 mi. single phase, 20 mi. secondary, 220 mi. services, 556 consumers, all lying in DeKalb and Jackson Counties. Plans deposit $25. Ladd Eng. Co., 209 Wood Bldg., Ft. Payne, engr.

May 3

†**Idaho**—POWER TRANSFORMER—Bureau Reclamation, Dpt. Interior, Bldg. 1A, Denver Federal Center, Denver Colo., one 3,333 kva 132,000 grounded wye/76,300 to 33,000 delta-volt single phase, 60 cycle, oil-immersed, self-cooled, outdoor, power transformer, interconnection substation, Idaho Power Co., Minidoka Proj., Spec 2609. Extended date. L. N. McClellan, ch. engr. CD 3/18—ENR 3/24.

●**Tex., Houston**—TUNNEL—Harris Co., Courthouse, Houston, and State Hy. Dpt., Austin, vehicle tunnel proj. between Baytown and Laporte under Houston Ship Channel, Type S (1) sub-aqueous portions of tunnel in 9 prefabricated segments and sinking in prepared foundation; Type T (1), 1,175,000 cu. yd. hydraulic embankment. $8,500,000. Parsons, Brinckerhoff, Hall & Macdonald, 51 Broadway, New York, N. Y., engrs. CD 1/29/47—ENR 2/20/47.

†**Wyoming** — PIPE, etc. — Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars Casper, one lot pipe, fittings and valves for complete exposed air, oil, water and carbon-dioxide piping systems; one lot pipe hangers; one lot strainers; one lot "Y" type strainers; one lot pressure reducing valves; one lot lubricated plug valves; one lot automatic sprinkler heads for Kortes Power Plant, Kortes Unit, Spec. 2629.

May 5

Texas — RURAL DISTRIBUTION LINES — Kimble Electric Co-operative, Junction, 210 mi. rural distr. lines, Kimble Co. $160,000. J. H. Flood & Co., 707 Amicable Bldg., Waco, engrs. CD 10/13—ENR 10/28.

LOW BIDDERS

Calif., San Francisco—TRAFFIC SIGNALS —Dpt. P. Wks., City Hall, Mar. 23, installing traffic signals on Pine and Market Sts. to Presidio Ave., from H. C. Reid & Co., 389 Clementina St., San Francisco, **$80,900.**

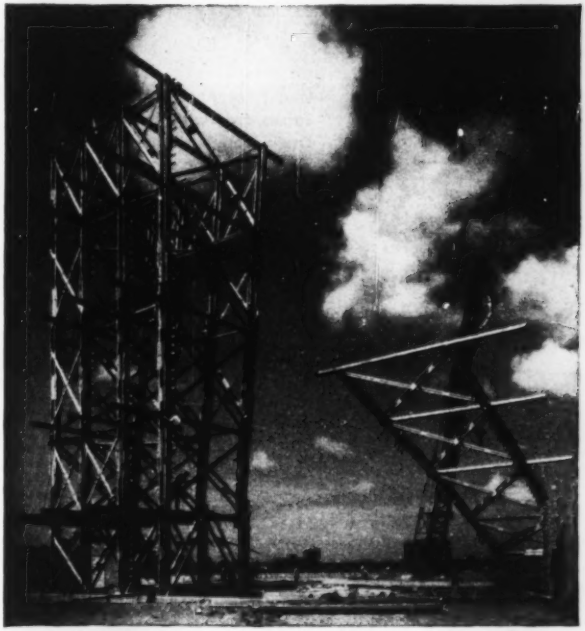
†**Colorado** — TRANSMISSION LINES — Bureau Reclamation, Dpt. Interior, Bldg. 1-A,

(Continued on page 71)

SPEED CONSTRUCTION

LOWER COSTS with....

HINES TIMBER FABRICATION SERVICE



Hines engineers, distribution and manufacturing facilities, which go all the way back to harvesting trees in the forest, provide a timber fabrication service that's second to none. Our engineering staff is capable of initiating original designs and when Hines handles the job, timbers arrive at the construction site—sized, shaped, bored, marked and blueprinted so that erection crews can proceed with maximum speed and efficiency.

If you are planning a timber structure of any kind, bring Hines into the picture at the planning stage so that you can take full advantage of our complete "forest-to-you" service. We'll be happy to work with your architects, engineers and contractors. Just drop a letter to Hines home office, and a representative will call and give you a complete outline of this timber fabrication service.

PROTECTED QUALITY THE NAME OF FAME HINES IN LUMBER FROM TREE TO YOU

EDWARD HINES LUMBER CO.

2431 SO. WOLCOTT AVE. • CHICAGO 8, ILL.

Offices in Principal Cities

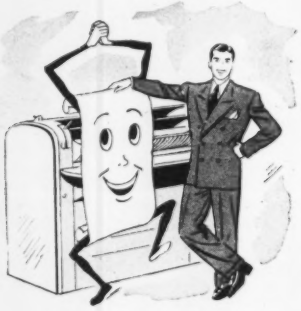
Month after Month–
OZALID materials are UNIFORM!

SHIPMENT AFTER SHIPMENT, month after month, Ozalid materials are in balance!

They are constant in printing speed, in reprint speed, in image color and image density, and in dozens of other characteristics *which give peak efficiency to an Ozalid operation.*

This uniformity means that the Ozalid operator's time is spent in feeding material into the machine, rather than testing, retesting... then starting all over!... to learn the differing characteristics of each new package of sensitized material.

In addition, Ozalid materials show scrupulously maintained *superiority.* Scientific tests on every batch of Ozalid materials assure an ideal balance of physical strength, higher resistance to fading, covering power, and *keeping qualities* unmatched by any other diazo-sensitized materials.



Ozalid's continuous laboratory control comes free with every package of Ozalid materials! And—Ozalid's nationwide technical organization is ready to help you in any part of the country.

NOTE TO NON-USERS OF OZALID:

Do you know the story of America's Simplest Business System? Ozalid duplicates anything drawn, typed, or written in as little as 25 seconds! Ask for FREE booklet outlining the many ways in which Ozalid can save you time and dollars. Consult your classified directory or write to...

OZALID Johnson City, N. Y. Dept. 50
A Division of General Aniline & Film Corp.
"From Research to Reality"

DON'T COPY!... USE OZALID!

(Continued from page 68)

Denver Federal Center, Denver, cancelled bids to have been opened Mar. 30, Flatiron-Greeley 115 kilovolt transmission line approx. 26 mi. Colorado-Big Thompson Proj., Wild Co., Spec. 2551. CD 3/15—ENR 3/17.

†**Colorado** — TRANSMISSION LINES — Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, cancelled bids to have been opened Mar. 31, Wiggins-Hoyt 115 kilovolt transmission lines, Colorado-Big Thompson Proj., between Wiggins and Hoyt, Morgan Co., Spec. 2570. CD 2/24—ENR 3/10.

Louisiana—RURAL DISTRIBUTION LINES —Louisiana Electric Co-operative, Inc., P. H. Randel, pres., Alexandria, cancelled bids to have been opened Feb. 28, 247 mi. rural distr. lines, Natchitoches, Grant, Rapides, Evangeline, Avoyelles and St. Landry Parishes, **$260,000.** Project postponed indefinitely. CD 2/16.

Tex., Dallas—STADIUM IMPRVS.—Cotton Bowl Stadium, State Fair of Texas, Fairgrounds, Mar. 24, concrete, steel Cotton Bowl stadium unit of 7,758 seats, from United Constr. Co., Burt Bldg., **$385,320.** Chappell, Stokes & Benneke, 312 Burt Bldg., engrs.

†**Tex., Orange**—SWIMMING POOL, etc.—Eighth Naval Dist., c/o Officer in Charge, Bldg. 16, New Orleans, La., rejected bids Dec. 21, rein.-con. outdoor swimming pool, L. B. **$169,124.** CD 1/10—ENR 1/13, under LB.

Wis., Port Edwards—BATHHOUSE, etc.—Village, Mar. 22, general contract bathhouse and swimming pool, from Frank J. Henry, Wisconsin Rapids, **$97,000;** plumbing and heating, from Hasche Plumbing & Heating Co., Sheboygan, **$32,998.** CD 3/2—ENR 3/10.

CONTRACTS AWARDED

Arkansas—RURAL DISTRIBUTION LINES, etc.—Kamo Electric Co-operative, Inc., 224 Wilson St., Vinita, Okla., 39 mi. 69 kv. transmission lines, and 2 substations, Benton Co., to Walco Eng. & Constr. Co., 2408 E. 4 Pl., Tulsa, Okla., **$224,258.** W. R. Holway & Assoc., 302 E. 18 St., Tulsa, Okla., engrs.

Calif., Stockton — ROLLER RINK — Rolla-Torium 24 N. Aurora St., 85x170 ft. roller rink, to Cannon Constr. Co., 142 N. California St. Approx. **$101,350.**

Florida—RURAL DISTRIBUTION LINES—Clay Electric Co-operative, Inc., Keystone Heights, 370.7 mi. rural distr. lines, Clay Co., to Leo T. Barber, Moultrie, Ga., **$101,266.** E. P. McLean Eng. Co., Moultrie, Ga., engrs.

Fla., St. Petersburg—RACE TRACK, etc.—St. Petersburg Kennel Club, c/o contractor, race track and grandstand, to Mills & Jones Inc., 2260 4 Ave. So., Approx. **$500,000.**

Georgia—RURAL DISTRIBUTION LINES—Flint Electric Membership Corp., Reynolds, 295.1 mi. rural distr. lines, Taylor Co., to Alrich Electric Constr. Co., 630 11 St., Augusta, **$315,008.** CD 12/10—ENR 12/16.

Ia., Maquoketa—SWIMMING POOL—City, City Hall, swimming pool, to Clinton Eng. Co., Clinton, **$62,563.** Romine, Sindt & Snow, Union Arcade, Bldg., Davenport, engrs.

Missouri—RURAL DISTRIBUTION LINES —New Mac Electric Co-operative, Neosho, 286.82 mi. rural distr. lines, 5 mi. conversion lines, Jasper, Newton, McDonald and Lawrence Counties, to Scott Constr. Co., Fort Scott, **$181,788.** Bids 2/25. CD 2/16.

New Mexico—LOOP LINES—Southern Union Gas Co., Burt Bldg., Dallas, Tex., field and loop lines, Farmington area, own forces, **$225,000.** CD 6/4/48—ENR 6/24/48.

North Carolina — RURAL DISTRIBUTION LINES—Albemarle Electric Membership Corp., Hertford, 226.78 mi. rural distr. lines and converting 33.52 mi. lines, Chowan Co. to P. D. Cline Constr. Co., Box 349, Raleigh, **$343,-581.** Bids 12/15. CD 12/14—ENR 12/23.

Tennessee—RURAL DISTRIBUTION LINES —Tri-County Electric Membership Corp., Lafayette, 336.69 mi. rural distr. lines, Macon Co., to Oman Constr. Co., P. O. Box 146, Nashville, **$483,595.** Pat M. Sullivan, 905 Stahlman Bldg., Nashville, engr. CD 12/17 —ENR 12/30.

Texas—RURAL DISTRIBUTION LINES—Lamb County Electric Co-operative, Inc., Littlefield, 77.3 mi. rural distr. lines, Lamb Co., to Kennett & Pavlicek, Box 1035, San Angelo, labor **$16,290,** materials **$77,000,** total $93,290. H. N. Roberts & Assoc., 1310 Avenue Q, Lubbock, engrs. CD 10/22—ENR 11/4.

Texas—RURAL DISTRIBUTION LINES—San Bernard Electric Co-operative, Inc., Bellville, 105 mi. rural distr. lines, Austin Co., to Willis & Hinders Co., Box 204, Olney, labor **$12,410** materials **$105,000,** total $147,410. J. H. Flood & Co., 707 Amicable Bldg., Waco, engr. Bids 2/17.

Tex., San Antonio—GAS LINES, etc.—City Public Service Bd., 201 N. St. Marys St., gas line laterals and mains expans. in old districts, **$200,000;** electric transmission line imprvs., rehabilitation and replacements various sects. of city, **$275,000,** own forces. CD 11/11 —ENR 11/25.

Alta., Edmonton—OIL WELL DRILLING—Pan Western Oils Ltd., Calgary, well drilling 0.5 mi. from Edmonton Country Club, to Devon Drilling Co., c/o owner, Approx. **$100,000.**

Man., Lyleton — OIL WELL SINKING — Souris Valley Oil Co., Oscar Kniseley, genl. mgr., Overton, Tex., U. S. A., oil well sinking, Lyleton-Melita area, southwestern Manitoba, to J. P. Owen Co., Overton, Tex., U. S. A., Approx. **$150,000.**

Floor's Brilliant Future Mapped by *Terrazzo*

Giving permanent expression to an architect's idea, this Terrazzo floor depicts the details of a metropolitan map with eye-catching fidelity.

Wherever lifetime floors are desired, Terrazzo performs brilliantly. Available also for walls, stairs, and wainscots, it offers infinite possibilities of design in virtually unlimited color combinations.

Terrazzo requires no refinishing, no painting, no costly repairs. It is easy to clean, hard to stain . . . and invitingly beautiful *from now on.*

Write for Free AIA Kit—a complete reference work about TERRAZZO, the marble-hard, concrete - durable floor.

THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION, INC.
1420 New York Avenue, N. W. Dept. E Washington 5, D. C.

"GUNITE" CONCRETE
(Since 1915)
FOR • STEEL PLATE LINING • STEEL ENCASEMENT • BUILDING NEW WALLS • LINING WATER RESERVOIRS TUNNELS AND SEWERS • PLATE LINING OF STEEL STACKS, BUNKERS, DUCTS • REPAIR OF DISINTEGRATED CONCRETE AND MASONRY • CANAL, DITCH AND DRAIN LINING
GUNITE CONCRETE & CONST. CO.
1301 Woodswether Rd., Kansas City 6, Mo.
District Branch Offices
R. N. Turner, Dist. Mgr., 228 No. LaSalle St., Chicago 1, Ill.; B. H. Mueller, Dist. Mgr., 6625 Delmar Blvd., University City, (St. Louis), Mo.; Philip D. Barnard, Dist. Mgr., 2036 Addison, Houston 5, Tex.
Branch Offices: Denver, Dallas, New Orleans
See our catalog in Sweet's

Hayward Buckets

Use this Class "E" Clam Shell Bucket for handling crushed stone, gravel, sand and other bulk materials.
THE HAYWARD CO., 48-50 Church St., N. Y.

CONSTRUCTION REPORTS-Second Section

Third Section Construction Reports on page 82

WATER SUPPLY

BIDS ASKED

April 12

Mass., Chester—Town Bd. Water Comrs., 4,550 ft. 8 in. watermains. Approx. $28,000. Plans deposit $10. Tighe & Bond, 189 High St., Holyoke, engrs.

April 15

Okla., Tulsa—City, Contr. 6, Spavinaw Proj. outlet piping, meter equip., chlorination equip. meter bldg. and conduit connections. $200,000. Plans deposit $20. W. R. Holway, 302, E. 18 St., engr. CD 3/21/46—ENR 4/4/46.

April 19

Calif., Hawthorne—City, City Hall, municipal water treatment plant addn. $50,000. Quinton Engineers, Ltd., 816 S. Figueroa St., Los Angeles, engr.

B. C., Vancouver—J. L. Adams, engr., c/o Central Mortgage & Housing Corp., 360 Homer St., 11 mi. water distr. sys., for Fraser View Housing. Plans deposit $25.

May 10

●**Calif., San Diego**—City, Civic Center Bldg., 66 m.g.d. Alvardo Filtration Plant. $2,000,000. Plans deposit $50. D. A. Elliott, 256 S. Berendo St., Los Angeles, archt. James M. Montgomery, 117 E. Colorado St., Pasadena, engr. CD 10/16/46—ENR 10/31/46.

LOW BIDDERS

Mass., Boston—Commonwealth of Mass., Metropolitan Dist. Comn., 20 Somerset St., Mar. 24, Contr. 168, aqueduct and reservoir, Chicopee Valley and Ware Hill, Ludlow, from G. Rotondi & Sons, 199 Laurel St., Melrose, **$483,935.** CD 3/3—ENR 3/10.

Mass., Lowell—City, Supt. Water Wks., City Hall, Mar. 22, wells, pump. station equip., electrical work, from D. L. Maher Co., 38 B Brattle St., Cambridge, **$39,400.** Whitman & Howard, 89 Broad St., Boston, engrs.

S. D., Mitchell—City, City Hall, rejected bids Feb. 21, water treatment plant. **$50,000.** Charles Trimmer, city engr.

S. D., Sisseton—City, rejected bids Mar. 14, reservoir, pumphouse, pumps and iron removal equip. CD 2/3.

Tenn., Erwin—Bd. P. Utilities, Erwin, Mar. 28, pump. station addn. and distr. sys. extens. from Roy Payne, 2704 Glass St., Chattanooga, **$39,996.** CD 3/8—ENR 3/10.

Tex., Houston—City, M. H. Westerman, secy., Mar. 23, chlorination bldg., from A. S. Koehler, Shell Bldg., **$34,895.** Est. $32,000. CD 3/16.

Tex., Lubbock—City, Mar. 24, distr. trunk watermains from R. H. Fulton Constr. Co., Lubbock, **$216,253.** R. L. Oldham, city engr. CD 3/8—ENR 3/10.

CONTRACTS AWARDED

Miss., Jackson—State, 2 water wells, 415 N. West St., to Layne Central Co., Millsaps Bldg., Jackson. **$40,000.**

Mo., St. Louis—Mallinckrodt Chemical Wks., 3600 N. 2 St., Zone 7, steel water cooling tower, rear of 45 Destrehan St. Owner builds. Approx. **$30,000.** Frank J. McDevitt, 4402 McPherson, Zone 8, engr.

N. C., Morganton—City, C. H. Helms, town mgr., WW imprvs., 7,000 lin. ft. 12 in. pipelines, to Gibson Piping & Constr. Co., Newton, **$44,121.** Bids 2/18. J. N. Pease & Co., Inc., 119½ E. 5 St., Charlotte, engr.

Okla., Oklahoma City — City, Municipal Bldg., 200 N. Walker St., watermains in N. Santa Fe N. Western Addns., 42, and 41 Sts. for Oklahoma Industries Addn., to Sherman Machine Co., 18 E. Main St., **$57,533.** Bids 3/15. CD 3/10.

Tex., Huntsville—City, steel water storage tank, rein.-con. fdn. and rein.-con. booster pump station, to A. S. Koehler, Shell Bldg., Houston, **$33,100*****500,000 gal. steel water tank and tower, to Pittsburgh-Des Moines Steel Co., Pacific-Am. Bldg., Dallas, **$70,000***** c. i. waterlines connecting with storage tank, **$30,000,** force account. Grand total $133,100. Valco, Inc., M & M Bldg., Houston, engr.

Que., Montreal — Municipality, water distr. service, incl. 1881 lin. ft. 36 in. pressure pipe, 1,888 lin. ft. 16 in. p.pe, to Pressure Pipe Co. of Canada, 6995 Chateaubl St. **$67,415.** CD 3/2/48—ENR 3/18/48.

SEWERS, WASTE DISPOSAL

BIDS ASKED

April 11

Md., Towson—Comrs. Baltimore Co., Court House, 230 lin. ft. 18 in. rein.-con. storm drains, 11,720 lin. ft. 6 and 8 in. vitr. clay and 1,869 lin. ft. extra strength vitr. clay sanitary sewers and house connections, Contr. 158 D. & S. Plans deposit $5. Wm. F. Neale, ch. engr. CD 2/7/45—ENR 2/22/45.

April 12

Mass., Spencer—Town, Bd. Selectmen, Town Hall, Contr. 1, sewage treatment plant addn. $70,000. Plans deposit $25. Howard E. Bailey, 6 Beacon St., Boston, engr.

April 18

Minn., Wabasha—City, Utilities Comn., H. J. Eggenberger, secy., City Hall, sanitary sewer and lift station, incl. Contr. A, 13,356 lin. ft. 8 and 10 in. sewer main, 2,045 lin. ft. 6 in. force main, appurtenances, 38 manholes, 1 special manhole, 20 ft. 8 in. culvert pipe with fap gate, 2,400 lin. ft. 6 in. house connections, 100 ft. Y branches, 252 ft. 8 in. c. i. sewer pipe, 5 cut-ins; Contr. B, lift station; Contr. C, watermains extens., incl. 5,330 lin. ft. 6 in. Class 150 c. i. watermain, hydrants, valves, boxes, etc.; Contr. D, test wells, $50,000. Plans deposit $15 Contrs. A, B and C, $5 Contr. D. Davy Eng. Co., 502 Main St., LaCrosse, Wis., engr.

April 20

Neb., Grand Island—City, sewage plant addn. and general imprvs. $60,000. Black & Veatch, 4706 Broadway, Kansas City, Mo., engrs. CD 3/2/48—ENR 3/18/48.

April 29

Pa., Mechanicsburg—Municipal Auth. Mechanicsburg Boro, Municipal Bldg., sewerage sys. and treatment plant. Plans deposit $20 sewerage sys., $15 sewage treatment plant. Gannett Fleming Corddry & Carpenter, Inc., 600 N. 2 St., Harrisburg, consult. engr.; adv. ENR 4/7. CD 4/18/46—ENR 5/2/46.

May 6

Colo., Littleton — City, sewage treatment plant, $165,000. R. J. Tipton & Assoc., 602 Insurance Bldg., Denver, archts. CD 9/18/46—ENR 10/3/46.

May 9

Calif., Yuba City—City, City Hall, Unit 3, sewage pump. plant for municipal sewage disposal project, approx. $50,000. Plans deposit $15. George W. Reed, City Hall, city engr. Harry N. Jenks, 63 Crescent Dr., Palo Alto, consult sanitary engr. CD 4/26/48—ENR 5/13/48.

LOW BIDDERS

Calif., San Jose—City, City Hall, Mar. 21, sanitary and storm sewers, Unit 2, from Burch & Bebek, 2803 Los Flores Blvd., Lynwood, **$308,493.** (**Correction**—name of low bidder). CD 3/29—ENR 3/31, under LB.

Ill., Round Lake—Round Lake Sanitary Dist., Round Lake, Mar. 2, sewerage sys., incl. 4 trunk sewers, from A. Meyers & Co., North Chicago, **$97,130;** treatment plant, for Round Lake, Round Lake Beach and Round Lake Park, from Green & Gust Co., 2130 S. Michigan St., Chicago, **$198,287.** Est. $300,000. CD 3/2—ENR 3/10.

CONTRACTS AWARDED

●**Calif., Los Angeles**—Bd. P. Wks., 153 City Hall, power and light distr. sys., Hyperion Activated Sludge Plant, El Segundo, to Newberry Electric Corp., 1038 Venice Blvd. **$1,151,672.** Bids 1/5, awarded 3/18. CD 1 11—ENR 1/13.

●**Ill., Chicago**—City Dpt. Purchases, Contracts & Supplies, City Hall, Contr. 1-A, Auxiliary Outlet pumping station, to M. J. Pontarelli, Inc., 4248 N. Kilpatrick Ave., **$1,579,260.** Bids 11/3. CD 11 9—ENR 11/11, under LB.

Mass., New Bedford—City, P. Wks. Dpt., 800 ft. 12 in. force main, 4 mi. interceptor sewers, 2 pump. stations, to A. Tiatelli & T. Loranger & Sons, 404 Nash Rd., **$938,097.** Bids 3/10. CD 3/16—ENR 3/24, under LB.

Minn., Hopkins—C. C. Congdon, city mgr., Hopkins, trunk sewer, incl. 15,000 lin. ft. 18 in. pipe, to De Graff Wolff, 2360 University Ave., St. Paul, **$144,789.** Bids 3/15. CD 3/2—ENR 3/10.

N. M., Hobbs—City, sewer extens. South Hy. and in Old San Jose, to M. & M. Constr. Co., Hobbs, **$57,654.** Awarded 3/17. Ashley G. Classen & Assoc., 504 N. Kansas St., El Paso, Tex., engrs.

Tex., San Antonio—W. K. Ewing Co., Alamo Natl. Bank Bldg., sanitary sewers off Austin Hy. north of Alamo Heights, to Colglazier & Hoff, 326 Seguin Rd., **$55,000.**

Wis., Milwaukee—City, storm sewer in W. Keefe Ave., to Otto P. Seefeld, 5101 W. State St., Zone 8, **$83,942.** Bids 3/15, awarded 3/29. CD 3/11.

B. C., Burnaby — Municipality, sewerage sys. incl. 27,000 lin. ft. 4- to 12- in. vitr. clay pipe, 91 manholes, Willingdon Heights area, to G. W. Ledingham & Co., 1025 W. 77 Ave., Vancouver, **$72,321.** Bids 3/21, awarded 3/28. CD 3/14—ENR 3/17.

BRIDGES

BIDS ASKED

April 11

N. Y., New York — President Manhattan Boro, Municipal Bldg., Zone 7, foundations for viaduct overpasses between Franklin D. Roosevelt Dr. and 1 Ave. at E. 42 and E. 48 Sts. etc., for United Nations Proj., Contr. 162. Plans deposit $25.

April 12

†**Virginia**—Pub. Roads Admin., 1440 Columbia Pike, Arlington, Va.

Amherst and Rockbridge Counties—rein.-con. structure with stone facing, grading, surfacing approaches, 0.163 mi. Proj. 1F3, Blue Ridge Parkway. Plans deposit $10.

April 19

†**Tennessee**—Pub. Roads Admin., Gatlinburg.

Blount Co.—5 rein.-con., stone masonry bridges with approaches, 0.309 mi. Proj. 3B5, 6, 7, 8, 9, Great Smoky Mountains National Park. Plans deposit $10.

On or About April 28

†**Georgia**—U. S. Eng., P. O. Box 1169, 2301 Grant St., Mobile 7, Ala., Tanyard Creek Bridge, Serial No. Eng-01-076-49-136; and bridge over Allatoona Creek, Serial No. Eng-01-076-49-137, both Bartow Co.

LOW BIDDERS

La., New Orleans—City, City Hall, Mar. 28, De Saix-Bayou St. John bridge, from R. P. Farnsworth & Co., 1515 S. Salcedo St., **$90,820.**

Iowa — State Hy. Dpt., Ames, Mar. 29, 22x190 ft. high truss bridge with two 22x50 ft. I-beam approach spans, County Trunk Road A east of Malvern over West Nishnabotna River between Sects. 26 and 35-72-41, R. R. 8, 19 (3), from Brogan Constr. Co., 307 Masonic Temple, Des Moines, **$87,139.** CD 3/16—ENR 3/24.

●**Massachusetts**—Mystic River Bridge Auth., E. A. Brest, chn., 6 Beacon St., Boston, Mar. 24, paving superstructure, Mystic River Bridge, Charlestown and Chelsea, from Merritt, Chapman & Scott Corp., 79 Milk St., Boston, Contr. 8 **$1,463,200,** Contr. 8A **$589,900,** Contr. 8B **$950,300.** CD 3/4—ENR 3/10.

●**New York**—Dpt. Pub. Wks., Albany, Mar. 30, reconstructing structure carrying Route 208 over New York Central R. R. at Walden, incl. 49 ft. I-beam deck structures and 0.41 mi. c. conc. approaches, Orange Co., from Shanahan Constr. Co., Inc., Ellenville, **$367,862** est. $399,000***reconstructing 4 small bridges and 0.4 mi. b. conc. paved approaches on Route 30 at Baxter Brook, in Harvard; at Trout Brook in Shinhopple; in Downsville, one at Downs Brook and at Wilson Hollow Creek, Delaware Co., from D. Cerretani & Sons, Binghamton, **$203,097** est. $208,000*** wid'n steel, concrete, 3 span structure carrying Plandome Rd. over Long Island R. R. midway between Plandome and N. Hempstead Turnpike, Nassau Co., from Hendrickson Bros. Inc., 63 N. Central Ave., Valley Stream, **$69,342** est. $73,000***constructing 3 span, rein.-con. T-beam, continuous structure carrying Commack-Patchogue Hy. over Rd. 78 over Long Island R. R. 1½ mi. east of Central Islip, incl. 0.23 mi. stabil. soil pavement approaches, Suffolk Co., from John C. Peterson Constr. Corp., 113 Grand Ave., Baldwin, **$169,781** est. $184,000***3 grade separation structures on previously graded sect. of Ontario Thruway between Routes 96 and 64 incl. 4 span 271 ft. I-beam deck structure carrying Mile Square Rd. over the Thruway, 31 ft. rein.-con. rigid frame structure carrying Thruway over the New York Central R. R., 4 span 191 ft. I-beam structure carrying Lorscher Rd. over the Thruway, 0.16 mi. bit. gravel, surface approach pavements, Monroe and Ontario Counties from Baughman & Blair, Inc., Fisher St., Rochester, **$507,724** est. $516,000*** bridge on improved location replacing bridge, E-80, carrying local road over canalized Seneca River, 3 mi. north of Seneca Falls, incl. 6 ft. main truss span, four 75 ft. approach spans, 18 ft. b. conc. approach pavement, etc., Onondaga and Cayuga Counties, from Ed Smith Eng. & Constr. Co., Syracuse, **$529,593** est. $529,030. CD 3/16—ENR 3/24.

North Carolina—State Hy. & P. Wks. Comn., Raleigh, Mar. 29, structures 13.01 mi. U. S. 74, from point in U. S. 74 at east end of bridge over First Broad River, 1.7 mi. west of Shelby, southeast through south Shelby to point approx. 600 ft. west of Cleveland Mountain Proj. 8231, Cleveland Co., from W. F. Brinkley & Son Constr. Co., Inc., Box 595, Granite Quarry, **$82,022** est. $75,000-$100,000***structures N. C. 208 between Junction with U. S. 25 and Tennessee State Line, Proj. 9772, Madison Co., from Harvey H. Steward Co., 1932 Charlotte, Zone 4, **$63,552** est. $50,000-$75,000***structures 4.45 mi. U. S. 117 from point in U. S. 117 approx. 0.5 mi. south of south city limits of Goldsboro, north and northeast to point in U. S. 117 approx. 2,780 ft. north of North City limits, Proj. 2850, Wayne Co., from Sanford Constr. Co., Inc., 427, Sanford, **$58,587** est. $50,000-$75,000***structures 2.96 mi. N. C. 88 from point approx. 2.5 mi. north of West Jefferson, northwest to point approx. 0.5 mi. west of Warrensville, Ashe Co., from John H. Brinley, Thomasville, **$84,410** est $75,000-$100,000. CD 3/21—ENR 3/24.

Wisconsin—State Hy. Comn., Madison, Mar. 29, 0.675 mi. Columbia Co. bridge, approaches, S. T. Hy. 57, Proj. T 02-3 (1), Ozaukee Co., from Wm. E. Brinkman, Elmhurst, Ill., **$91,013;** cancelled bids to have been opened Mar. 29 0.016 mi. State Street Bridge, city of Chilton, Proj. S 4042 (2), Calumet Co. CD 3/9—ENR 3/17.

CONTRACTS AWARDED

●**Washington**—State Toll Bridge Authority, Olympia, bridge over Agate Pass between Bainbridge Island and Kitsap Peninsula, Kitsap Co., to Manson Constr. & Eng. Co., 821 Alaska Way, Seattle, **$1,398,139.** Bids 10/1. CD 10/6—ENR 10/14, under LB.

STREETS AND ROADS

BIDS ASKED

April 11

N. Y., New York—President Manhattan Boro, Municipal Bldg., Zone 7, for Abraham Lincoln Houses, widening, curbing, laying sidewalks, asph. repaving, 132 St.-Park Ave. to 5 Ave.; Madison Ave. 132 to 135 Sts.; curbing and sidewalks Park Ave. 132 to 135 Sts., 135 St.-Park

to 5 Aves., etc., Contr. 448; asph. repaving 5 Ave. 135 to 137 Sts., etc., Contr. 468. CD 8/25/44—ENR 9/7/44.

April 12

B. C., Vancouver—Central Mortgage & Housing Corp., J. L. Adams, engr., 360 Homer St., rough grading 9 mi. roads, 6 mi. lanes in Fraser View Housing. Plans deposit $10.

April 21

Utah, Cedar City—City, Ellen A. Simkins, recdr. Schedule 1, 15,237 lin. ft. concrete curb and gutter, 11,782 lin. ft. 4 ft. and 1,404 lin. ft. 5 ft. concrete sidewalks; Schedule 2, 15,914 lin. ft. concrete curb and gutter, 14,589 lin. ft. 4 ft. concrete sidewalk. John G. Lowman, city engr.

LOW BIDDERS

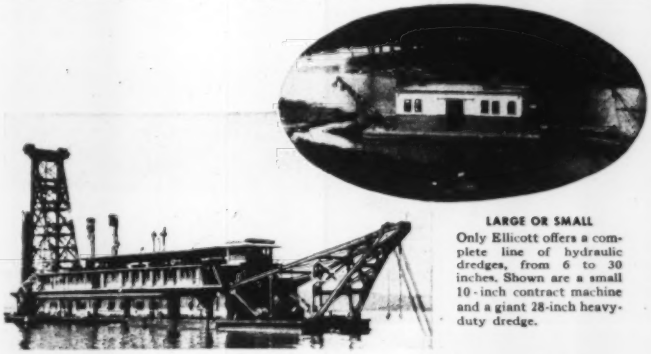
La., New Iberia—City, City Hall, cancelled bids to have been opened Apr. 4, 33,890 sq. yd. concrete pavement. Will re-advertise. CD 2/23.

Minnesota—State Hy. Dpt., St. Paul, Mar. 18, grading, paving, and Bridges 4103-4104, 6489 and 6490, S. P. 3508-67 (TH 75-8) and S. P. 3508-68 (TH 75-6), F 332 (6), from Central States Constr. Co., Crosby, **$376,927.** CD 3/2—ENR 3/10.

†Nevada—Pub. Roads Admin., Heroes Memorial Bldg., Carson City, Mar. 22, highway imprv. Nev. 6-B, Dalzell Canyon in Tolyabe National Forest, Lyon Co., from Silver State Constr. Co., S. Main St., Fallon, **$281,822.** CD 2/8—ENR 3/10.

●New York—Dpt. Pub. Wks., Albany, Mar. 30, c. conc. reconstr. 2.96 mi. Route 13 from intersection with Route 31 northward to southerly end of existing bridge over Barge Canal at Sylvan Beach, incl. 115 ft. welded girder bridge over Oneida Creek, etc., Madison and Oneida Counties, from Stento Constr. Co., Inc., 60 Exchange St., Binghamton, **$550,026** est. $559,000***b, conc. resurf. 7.45 mi. Route 63 from Dansville northwesterly to Delaware, Lackawanna & Western R. R. at Groveland, Livingston Co., from Asphalt Roadways Co., 1766 Main St., Buffalo, **$275,693** est. $315,000 ***b, conc. 4.54 mi. Route 40 from Melrose southward through Speigletown to Route 142 in city of Troy, Rensselaer Co., from Fitzgerald Bros. Constr. Co. Inc., Proctor Bldg., Troy, **$119,255** est. $124,000***reconstructing c. conc. pavement with safety center mall 5.78 mi. Route 9 from intersection with Route 20 southward in Rensselaer Co. to point in Columbia Co. near Boston and Albany underpass, etc., Columbia and Rensselaer Counties, from Johnson, Drake & Piper, Inc., 86 Trinity Pl., New York, **$1,623,836** est. $1,695,000.

Constructing 1.48 mi. Goshen-Fair Oaks Hy. through village of Goshen, paving twin, 36 ft. concrete arteries, separated by 20 ft. mall, concrete frame at Greenwich Ave., 50 ft. span



LARGE OR SMALL

Only Ellicott offers a complete line of hydraulic dredges, from 6 to 30 inches. Shown are a small 10-inch contract machine and a giant 28-inch heavy-duty dredge.

How ELLICOTT hydraulic DREDGES operate at Lowest Cost under all conditions!

ELLICOTT is the only organization that builds and designs hydraulic dredges and dredge components exclusively . . . there is no divided responsibility. That means each Ellicott Dredge is a *balanced unit* because all components work as a team with highest efficiency. Ellicott design also means operating with a minimum of skilled labor, resulting in overhead savings.

Ellicott service starts by designing your dredge for operation under varied conditions so that it outlasts any temporary work. *Proper hydraulic design* eliminates unnecessary wear, and parts that must wear under operation are easy to reach, inexpensive to replace, thus cutting maintenance costs.

Under all conditions, Ellicott Dredges operate at the lowest cost per cubic yard and they are designed for long life. Over 75% of the Ellicott Dredges built before 1928 are in operation today! For economy, long life and usefulness, specify Ellicott. You'll find Ellicott's 63 years of experience will give you complete satisfaction. For complete information, write today for the latest Ellicott Catalog to: ELLICOTT MACHINE CORPORATION, 1603 Bush Street, Baltimore, Maryland, U. S. A.

● COMPLETE LINE from 6 to 30 inch equipment for all dredging requirements.

● 63 YEARS OF EXPERIENCE with hydraulic dredges.

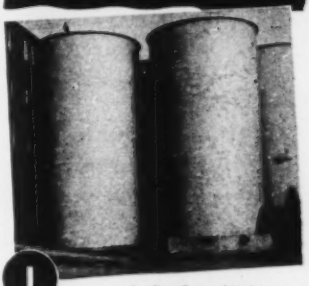
● UNDIVIDED RESPONSIBILITY . . . designed, built, delivered under one Ellicott contract.

● PROVED PERFORMANCE in the U. S. A. and abroad.

ELLICOTT HYDRAULIC DREDGES

any type — any size — any service

PROTECT
Metal, Masonry Surfaces with Arco's "*BIG 3*"!



1 Applier: General Maintenance and Engineering Co., Columbus, Ohio

DUM DUM for METAL
Heavy Protective Coating
STOPS RUST, CORROSION

Here's the reliable, time-proved protector of metal surfaces that never looks or feels its age. Once applied, Dum Dum for Metal protects against weather, fumes and gases. Effects important savings in maintenance costs.

NOT A PAINT—Spray applied in a thick, tough, elastic coating, 1/16" to 1/8" thick.

STAYS PLIABLE—While outer surface sets hard, the undersurface remains elastic and pliable.

HEALS ITSELF—If outer surface is broken, pliable undersurface hardens, preventing entry of moisture.

SEALS THE SURFACE—Field tests show no measurable moisture vapor transmission through the film.

2 **DUM DUM MASONOC**—Not a paint. Heavy, pliable coating seals cracks in masonry surfaces, stops moisture seepage, prevents need for costly reconstruction.

3 **STACK DUM DUM**—Heavy coating, protects concrete stack surfaces against vibration, resists high temperatures and general weather wear.

WRITE TODAY FOR THESE VALUABLE BOOKLETS

THE ARCO COMPANY
7301 Bessemer Avenue
Cleveland 4, Ohio

☐ Please send booklets illustrated.

☐ Please supply names of appliers operating in this locality.

☐ Please have maintenance engineer call.

Name _____ Title _____

Company _____

Street & No. _____

City _____ Zone _____ State _____

ARCO Maintenance Products

Important TO HEALTH AND EFFICIENCY

COOL, PURE DRINKING WATER ...ON THE JOB

Dobbins Portable Sanitary Drinking Fountain

Assures an adequate supply of cool, pure drinking water for workers *everywhere*—in factory or field. Protects their health, and keeps them on the job. Fountain has inner water container of stainless steel. Four gallon tank is fully insulated. Constant air pressure for instant flow of water is furnished by a few strokes of the pump at widely spaced intervals. *Operates at the press of a button*, like any bubbler drinking fountain. May be easily carried from place to place by shoulder strap, or mounted on truck, tractor or locomotive.

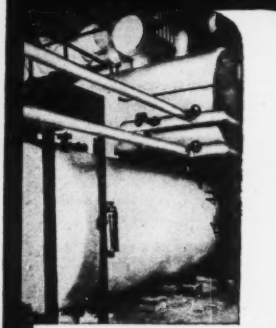
Banishes germ-spreading cups, dippers, pails.

DOBBINS MANUFACTURING CO.
DEPARTMENT 453 ELKHART, INDIANA

Dobbins Superbilt PORTABLE DRINKING FOUNTAIN

WRITE TODAY FOR FREE DESCRIPTIVE FOLDER

HERE'S YOUR COVER FINISH

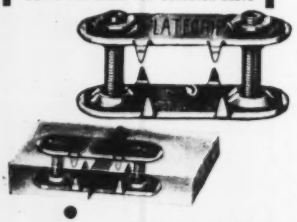


No need to sew covers onto insulation. Cementing saves time, costs less. Arabol Lagging Adhesive—developed for war needs—now meets all requirements on installations of all sizes. Easily applied, dries quickly, requires no painting. Write for Bulletin #12.

THE ARABOL MANUFACTURING CO.
110 East 42nd St., New York 17, N. Y.
1835 S. 54th Ave., Chicago 50, Ill.
1950 16th St., San Francisco 3, Cal.

Asbestos?... ARABOL!

PLATEGRIP
PLATE FASTENERS FOR CONVEYOR BELTS



Make strong dust-tight, water-tight joints in belts of any width. Special design spreads tension uniformly across belt, allow natural troughing of belt and assures smooth operation over flat, crowned or take-up pulleys. Sizes for belts of 1/4" to 1 1/2" thickness. *Write for Bulletin Sheet.*

Also Repair Plates For Mending Belts.

ARMSTRONG BRAY & CO.
5320 Northwest Highway, CHICAGO 30, U. S. A.

concrete frame at west bound connection, 45 ft. concrete frame at Pine Island Branch of Erie R. R. and 97 ft. beam span at Erie R. R. main line, etc., Orange Co., from A. E. Ottaviano, Inc., 80 Brook St., Croton-on-Hudson, **$2,182,273** est. $3,050,000***reconstructing 2.52 mi. Mamaroneck Ave., County Road 8C from Hutchinson River Parkway northward to Bryant Ave. in White Plains, constructing 2 concrete paved arteries 25 ft. wide separated by mall, Westchester Co., from Mt. Vernon Contg. Corp. 439 N. Terrace Ave., Mt. Vernon, **$752,459** est. $790,000***bit. grav. 2.2 mi. County Rd. 91 from intersection with County Rd 62-1 northeasterly to County Rd. 32 approx. 2 mi. northwest of Tribes Hill, Montgomery Co., from August Bohl Jr., Albany, **$69,251** est. $77,000.

Reconstructing bit. macad. 2.61 mi. Route 31D from intersection of Routes 19 and 31 south of Brockport, westerly to Orleans Co. line, Monroe Co., from Kens Constr. Corp., N. Tonawanda, **$92,890** est. $102,000***b. conc. 3 existing routes in Scotia and outskirts of Schenectady 2.84 mi. incl. 0.5 mi. Sacandaga Rd. in Scotia, where existing 28 ft. c. conc. will be resurfaced from Mohawk Ave. northwesterly to Toll St. resurf. 0.63 mi. Heidelberg Ave. from Curry Rd. northerly to Schenectady City line, resurf. 1.71 mi. Guilderland Rd. Route 145 from Albany Co. line northeasterly to New York Central overpass, Schenectady Co., from Kelleher & Shaffer Co., Schenectady, **$98,344** est. $106,000***b. conc. resurf. 3.93 mi. Route 17C from Endicott easterly to Johnson City, Broome Co., from Binghamton Constr. Co. Inc., Marine Midland Bldg., Binghamton, **$154,791** est. $159,000*** b. conc. repaving 2.13 mi. Union Rd., Route 18B, from Route 240 northward to Seneca St. at Ebenezer, Erie Co., from Depew Paving Co. Inc., 4955 Broadway, Depew, **$85,821** est. $104,000. CD 3/16—ENR 3/24.

N. Y., Woodside—New York City Housing Auth., 63 Park Row, New York, Zone 7, Mar. 29, street and yard imprvs. for Woodside Houses, Proj. No. NYC-5, in area bounded by 31 Ave., 51 St., Northern Blvd., Newton Rd. and 49 St., Queens Boro, from Matac Constr. Co., 6 Grandview Ave., Mt. Vernon, **$182,000.** CD 3/30—ENR 3/17.

North Carolina—State Hy. & Pub. Wks. Comn., Raleigh, Mar. 29, grading 13.01 mi. U. S. 74, from point in U. S. 74 at east of bridge over First Broad River, 1.7 mi. west of Shelby, southeast through south Shelby to point approx. 600 ft. west of Kings Mountain Proj. 8231, Cleveland Co. from Neal Hawkins, Box 548, Gastonia, **$121,322** est. $175,000-$200,000***sand asph. surface course 9.7 mi. Part 1, Old Wire Rd. from Hope-Cumberland Mills Rd. to Hoke Co. line, Part 2, from intersections of Maxwell Rd. north of Stedman to intersection N. C. 102, Cumberland Co., from Z. E. Sneeden's Sons, Box 255, Wilmington, **$53,406** est. $50,000-$75,000***grading, STBC, bit. 8.52 mi. from intersections of surface treated county road 2.5 mi. south of Murfreesboro, exten. via Brown's X-Roads to Union, Proj. 1-501, Hertford Co., from Barnhill & Long, N. Main St., Tarboro, **$116,303** est. $100,000-$125,000***grading 4.45 mi. U. S. 117 from point in U. S. 117 approx. 0.5 mi. south of south city limits of Goldsboro, north and northeast to point in U. S. 117 approx. 2,780 ft. north of the North City limits, Wayne Co., from Grannis & Sloan, Inc., Fayetteville, **$84,436** est. $100,000-$125,000***grading, sand bit. surf. course 6.19 mi. N. C. 53 from Bladen Co. line to point approx. 12 mi. southeast of Fayetteville, Proj. 3451, Cumberland Co., from Ballenger Paving Co., Box 1046, Greenville, S. C., **$86,274** est. $75,000-$100,000***traffic bound macad. (wid'n) conc. curb and gutters and structures, 1.098 mi. Mt. Pleasant on N. C. 73, Cabarrus Co., from C. A. Widenhouse, Concord, **$51,133** est. $50,000-$75,000***grading, traffic bound macad. and bit. 2.96 mi. N. C. 88 from point approx. 2.5 mi. north of W. Jefferson, northwest to point approx. 0.5 mi. west of Warrensville, Ashe Co., from National Truck Service, Inc., Box 39, Asheville, **$139,838** est. $150,000-$175,000***traffic bound macad. (wid'n) and bit. concrete binder and surf. course 4.87 mi. U. S. 311 and 421 from Stokes-Forsyth Co. line, south toward Walkertown on U. S. 311; from 0.3 mi. west of Winston-Salem northwest 1.2 mi. U. S. 421, Forsyth Co. and STBC, traffic bound macad., conc. binder and surf. course 12.68 mi. U. S. 220 in Asheboro, running south through Seagrove to Junction with N. C. 705, Proj. 5816, Randolph Co., from W. E. Graham & Sons, Cleveland, **$87,016** est. $75,000-$160,000 and **$464,322** est. $400,000-$500,000 respectively***traffic bound macad. conc. binder and surf. course 0.9 mi. U. S. 220 from E. Academy St. in Asheboro along south Fayetteville St. to Sunset Ave., from Salisbury St. north along N. Fayetteville St. to point 158.7 ft. north of city limits, Proj. 5813, Randolph Co., and combination Projects 5816 and 5813 Randolph Co., from Blythe Bros. Co., 2911 Hutchinson Ave., Charlotte, **$110,354** and **$394,684**, respectively. CD 3/21—ENR 3/24.

Tenn., Chattanooga—City, City Hall, rejected bids Mar. 22, resurf. 10.2 mi. city streets, $250,000. Will re-advertise. CD 2/28—ENR 3/3.

Tex., Dimmitt—City, L. G. Manning, mayor, Mar. 10, 40 blocks asph. paving, concrete curbing from L. A. Purtell, Lubbock, **$145,996.** Hasie & Green Eng. Co., P. O. Box 1139, Lubbock, eng.

● Wisconsin—State Hy. Comn., Madison, Mar. 29, c. conc. 0.496 mi. Oregon-Madison Rd., S. T. Hy. 13, Contr. 1, Proj. F. 014-2 (8), Dane Co., from Schueete Builders, Box 321,

Manitowoc, **$142,878*****c. conc. 0.26 mi. and 1.347 mi. Woodward Ave. and Madison, Liberty, Portland and Eclipse Sts., S. T. Hys. 15 and 13 city of Beloit, Proj. U 015-1 (4) and U 062-1 (1), Rock Co., from James Cave & Sons Co., 468 Water St., Racine, **$285,170***** c. conc. 4.252 mi. Appleton-Greenville Rd., S. T. Hy. 76 and U. S. Hy. 45, Contr. 2, Proj. F 010-2 (5), Outagamie Co., from Kramp Constr. Co., 2775 South 27 St., Milwaukee, **$249,598*****c. conc. 3.511 mi. S. T. H. 13 Auburndale Rd., U. S. Hy. 10, Contr. 1, Proj. T 019-3 (2), Wood Co., from Busman Constr. Co., 4638 Mill Creek Parkway, Kansas City, Mo., **$244,242*****c. conc. 9.77 mi. Peeksville-Morse Rd., S. T. Hy. 13, Contr. 1, Proj. F 04-6 (26), Ashland Co., from Universal Eng. Co., Medford, **$307,785*****c. conc. 9.84 mi. Morse-Mellen Rd. S. T. Hy. 13, Contr. 1, Proj. F 04-6 (27), Ashland Co., and c. conc. 5.754 mi. Manitou Falls-Superior Rd., S. T. Hy. 35, Contr. 1, Proj. F 02-4 (15), Douglas Co., from N. M. Isabella, Inc., 714 Market Pl., Madison, **$360,816** and **$315,876** respectively*** c. conc. 19.61 mi. Peeksville-Morse and Morse-Mellen Rd., S. T. Hy. 13, Contr. 1, Proj. F 04-6 (26) and Proj. F 04-6 (27), Ashland Co., from J. R. Griffith Co., 1500 Ninth St., Racine, **$625,910*****bit. 12.201 mi. Beloit East Co. line Rd., S. T. Hy. 15, Contr. 1, Proj. T 015 (1), Rock Co., from Rock Road Constr. Co., 5915 Rogers Ave., Chicago, Ill., **$314,305** ***bit. 9.519 mi. South County Line—West Morgan Ave. Rd., U. S. Hy. 41, Contr. 1, Proj. T 02-2 (1), Milwaukee Co., from Payne & Dolan of Wisconsin, 735 N. Water St., Milwaukee, **$614,255*****concrete masonry base and asph. 1.298 mi. West Fond du Lac Ave., S. T. Hy. 55, Contr. 1, Proj. U 027-1 (7), Milwaukee Co., from White Constr. Co., 2543 W. Greves St., Milwaukee, **$531,469.** CD 3/9—ENR 3/17.

Wis., Kenosha—City, Mar. 25, paving various streets, from Markus Thomsen, Kenosha, **$114,352.** R. M. Smith, city engr.

CONTRACTS AWARDED

Colo., Denver—City and Denver Co., Thomas P. Campbell, mgr. Improvt. & Parks, City and County Bldg., reconstr. 7 Ave. from Broadway to Pennsylvania St., Pennsylvania St. from 6 Ave. from Pennsylvania to Monroe St. to Western Paving Constr. Co., 5230 Washington St., Denver, **$181,952.** Bids 3/23. CD 3/14—ENR 1/17.

Ia., Muscatine—Rd. Supervs. Muscatine Co., Court House, grading secondary roads to Cameron & Joyce, Keokuk **$70,115.** Est. $65,-000. Bids 3/24. CD 3/22—ENR 3/24.

Mich., Detroit—Cty. Dpt. P. Wks., 164 City Hall, P. W. 693-694, 695, 697, 698, 699, 700, 701 and 702, to Weir Contg. Co., 7405 Joseph Camp, **$157,139;** P. W. 729, 732 and 739, to Denton Constr. Co., 7-120 Gengral Motors Bldg., **$5,631.** Bids 3/22, awarded 3/29 CD 3/16.

● **Minnesota**—State Hy. Dpt., St. Paul, gran. base bit. wearing surf. and bridge S. P. 8408-13 (TH 75-6) and S. P. 8106-09 (TH 75-6) F 243 (26) to Nelson, Mullen & Webster, 355 Gateway Bldg., Minneapolis, **$316,271***** grav. base bit. wearing surf. and bridge, S. P. 7201-06 (TH 5-121), F 587 (7), to Hallett Constr. Co., Crosby, **$362,708*****gray. base, bit. wearing surf. and bridge S. P. 2315-09 (TH 16-80), FI 589 (3), S. P. 2310-01 (TH 52-20), F 253 (4), and S. P. 2318-04 (TH 80-9) S 393 (1), to Central States Constr. Co., Crosby, **$434,686** ***grav. base, bit. wearing surf. and Bridge 6653 S. P. 2714-15 (TH 12-10) S. P. 2715-15 (TH 12-107) and S. P. 2715-13 (TH 12-107) U 186 (9), to S. J. Groves & Sons Co., 510 Wesley Temple Bldg., Minneapolis, **$362,970** ***grading, paving S. P. 6221-07 (TH 61-102), U 177 (4) to Okes Constr. Co., E. 1501 First National Bank Bldg., St. Paul, **$202,202,** Grand total **$1,678,837.** Bids 3/18. CD 3/2—ENR 3/10.

Neb., Gering—City, paving, to A. H. Read Constr. Co., Cheyenne, Wyo., **$111,447.** E. Y. Grupe, Scottsbluff, engr. Bids 3/15.

Tex., Raymondville—City, Charles R. Johnson, mayor, addnl. asph. paving, to Brown & Root, Inc., Box 3, Houston, **$250,000.** James V. Turnutte, Transit Tower, San Antonio, engr.

Tex., Schulenberg—Fayette Co., LaGrange, all weather road imprvs., Precinct 4, own forces. **$90,000.** CD 7/23/48—ENR 8/5/48.

Tex., Sherman—Grayson Co., Sherman, road constr., resurf. and imprvs., Precinct 1, **$75,000;** road surfacing, drainage, imprvs., Precinct 2, **$65,000,** own forces. CD 5/5—ENR 5/27.

Wash., Seattle—City, County-City Bldg., Zone 4, paving Lakeside Ave. S. and Market St. to Northwest Constr. Co., 3950, 6 Ave. N.W., **$141,792** est. $130,619 and **$98,134** est. $119,856 respectively***paving alleys, Hillman's Lake Front Div. 1, to Toney Romano, 2032 King St., **$53,350** est. $54,342 Grand total **$293,276.** R. W. Finke, city engr.

EARTHWORK, WATERWAYS

BIDS ASKED

April 12

†**Illinois**—U. S. Eng., 826 U. S. Court House and Custom House, St. Louis 1, Mo., road surf. on levee riprap on spur levee, Decognia and Fountain Bluff, Levee and Drainage Dist., Proj. Item IV-C, Jackson Co., Serial No. Eng. 23-065-49-117.

April 15

†**Connecticut**—U. S. Eng., Park Square Bldg., Army Base, Boston, 10, Mass., improvement dredging in Clinton Harbor, Serial No. Eng. 19-016-49-79. CD 6/9/44—ENR 6/29/44.

April 19

†**New York**—U. S. Eng., Engineer Park, Buffalo, Zone 7, rock shoal removal, Black

● Continental Chain Link, the only fence made of KONIK STEEL, gives you greatest protection at lowest cost per year of fence life. KONIK is a patented open hearth steel containing copper, nickel and chromium for greater strength—for extra resistance to rust. In the weaving of Continental Chain Link, the KONIK fabric is dipped in a special galvanizing bath which spreads a uniform coating of weather-proofing zinc over every inch of the fence. It will pay you to contact our nearest representative or call us at Kokomo to learn more about this economical, permanent property protection.

We'll Help You . . .

Our fence engineers stand ready to plan and help erect the type of fence "tailored" to your own property. Continental Chain Link fence gives you 14 distinctive construction advantages including stronger gates . . . pivot-type hinges . . . self-locking barb arms . . . 20% more ties.

WRITE FOR FREE BOOKLET

A card will bring your copy of "Planned Protection"—a complete manual on modern protection and control of property. Contact Continental at Kokomo, Indiana, or nearest sales office.

CONTINENTAL STEEL
CONTINENTAL STEEL CORPORATION
GENERAL OFFICES KOKOMO, INDIANA

PRODUCERS OF Manufacturer's Wire in many sizes, Shapes, Spigots and Bridles, including Galvanized; KOKOTE, Flame-Sealed, Copperized, Tinned, Annealed, Liquor Finished, Bright, Lead Coated, and special wire. ALSO, Coated and Uncoated Steel Sheets, Nails, Continental Chain Link Fence, and other products.

"Gunite" . . . . . the sand-cement product of the "CEMENT GUN," for Concrete and Masonry Repairs, Pre-Stressed Tanks, Steel Encasement and for lining Reservoirs, Sewers and Tunnels.

CEMENT GUN COMPANY
"GUNITE" CONTRACTORS
GENERAL OFFICES—ALLENTOWN, PENNA., U.S.A.
MANUFACTURERS OF THE "CEMENT GUN"

Rock Canal, Black Rock Channel and Tonawanda Harbor, Serial No. Eng. 30.023-49-60. CD 6/9/44—ENR 6/29/44.

April 22

Tex., Raymondville — Villacy County—Red Fish Bay Navigation Dist., Raymondville, barge-traffic port, incl. docks, piling, and warehouse at Port Mansfield, 28 mi. east of here. $100,000. CD 3/3/48—ENR 3/18/48.

LOW BIDDERS

●†**California**—U. S. Eng., Bldg. T-7, Gravelly Point, Va., Mar. 17, breakwater extens., Crescent City Harbor, Serial No. Eng-04-203-48-12, from Morrison-Knudsen Co., Inc., and Macco Corp., Clearwater, **$3,245,375**, Est. $2,305,567. CD 2/18—ENR 2/24.

†**Indiana**—U. S. Eng., 222 N. Bank Dr., Chicago, Ill., Mar. 17, dredging 138,000 cu. yd. channel excav., Indiana Harbor, Serial No. Eng. 11-032-49-71, from Great Lakes Dredge & Dock Co., 122 S. Michigan St., Chicago, Ill., **$123,786.** Est. $109,020. CD 3/4—ENR 3/10.

†**Louisiana**—U. S. Eng., foot of Prytania St., New Orleans, Mar. 25, 4,400,000 cu. yd. excav., Bayou Lafourche, Serial No. Eng. 16-047-49-236, from Atlas Constr. Co., Waxahachie, Tex., **$503,360.** CD 3/2—ENR 3/10.

†**Missouri** — U. S. Eng., 826 U. S. Court House and Custom House, 1114 Market St., St. Louis, Zone 1, Mar. 25, levees, Perry Co. Levee Dists. 1, 2 and 3, Proj. Item H-A, Perry Co., Serial No. Eng. 23-065-49-112, from Acme Constr. Co., Warrenton. **$124,195.** Approx. $128,475. CD 3/11—ENR 3/17.

†**Montana**—Bureau Reclamation, Old High School Bldg., Helena, Mar. 23, earthwork, structures, relocation county roads approaches to Canyon Ferry Dam, Canyon Ferry Unit, Missouri River Basin, 16 mi. northeast Helena, Spec. 2880, from Kiely Constr. Co., East of Butte, **$107,033.** CD 2/25—ENR 3/10.

†**New York and New Jersey**—U. S. Eng., 102 Wall St., New York 5, N. Y., removing, disposing all material approx. 180,950 cu. yd. incl. ledge rock, Sect. 5, Rock Area in New York and New Jersey Channels, Serial No. Eng. 30-045-49-205, from Great Lakes Dredge & Dock Co., 17 Battery Pl., New York, N. Y. **$401,709.** Est. $378,366. CD 2/28—ENR 3/3.

†**New York**—U. S. Eng., Engineer Park, Buffalo, Zone 7, maintenance dredging completion, Buffalo River and ship channel, Buffalo Harbor, Eng-30-023-48-43, from Great Lakes Dredge & Dock Co., Morgan Bldg., Buffalo, **$167,520.** Est. $150,120. CD 2/18—ENR 2/24.

†**North Carolina**—U. S. Eng., 308 Customhouse, Wilmington, rejected bids, Mar. 16, maintenance dredging, Cape Fear River, at and below Wilmington, Serial No. Eng. 31-075-49-36. Will not re-advertise. CD 3/3.

●†**North Dakota**—U. S. Eng., Fort Lincoln, P. O. Box 300, Bismarck, Feb. 25, furnishing, sel. coarse and fine concrete aggregates, Eng-32-015-49-63, Schedule A, 856,500 tons coarse aggregate, from J. L. Shely Co., 401 Snelling Ave. N., St. Paul, Minn., **$1,241,925** est. $1,474,765***Schedule B, 345,000 tons fine aggregate and Schedule C, 1,201,500 ton coarse and fine aggregate, from Becker County Sand & Gravel Co., Crosby, Minn., **$310,500** est. $479,550 and **$1,285,605** est. $1,954,315 respectively. CD 1/28—ENR 2/3.

†**Oregon**—Bureau Reclamation, Dpt. Interior, Klamath Falls, earthwork and structures for channel improv. of Lost River, Station 374 plus 50 and from 375 plus 34.2 to 665 plus 00 and Miller Creek, Station 9 plus 00 to 112 plus 46.4, Langell Valley, Klamath Proj. Tule Lake Div. Spec. 2578, from Charles T. Hover, Burlingame, Calif., **$138,972.** CD 2/24—ENR 3/10.

†**Oregon**—Bureau Reclamation, Dpt. Interior, Klamath Falls, earthwork, structures for Lost River Diversion channel enlargement from Lost River to Klamath River, Klamath Proj. Tule Lake Div. Spec. 2580, from George R. Stacy, Tule Lake, Calif., **$537,292.** CD 2/24—ENR 3/10.

●†**Pennsylvania**—Dpt. Forests & Waters, 104 Education Bldg., Harrisburg, Mar. 29, dredging, floodway clearing and excav. River Sect. 4 and dredging, floodway clearing and excav. River Sect. 2 of Schuylkill River Desilting Proj., Berks Co., from Eastern Eng. Co., 4 N. North Carolina Ave., Atlantic City, N. J., **$2,343,100** and **$1,093,875** respectively. Est. $2,500,000 each. CD 3/2—ENR 3/3.

CONTRACTS AWARDED

Fla., Miami Beach—Roney Plaza Corp., 2201 Collins Ave., 3 groins, to Reed Constr. Corp., 1345 20 St., Miami Beach, **$59,000.**

Fla., Miami Beach—Traymore Hotel, c/o contractor, bulkhead and groynes, to Reed Constr. Corp., 1345 20 St., **$43,000.**

●**Mass., West Springfield**—U. S. Eng., Army Base, Boston, Zone 10, Riverdale Dike and Wayside and Riverdale Pumping Stations, West Springfield, Serial No. Eng. 19-016-49-35, to Daniel O'Connell's Sons, Inc., 480 Hampden St., Holyoke, **$783,067.** Bids 3/3, awarded 3/23. CD 3/9—ENR 3/17.

●†**Mississippi**—U. S. Eng., P. O. Box 60, Vicksburg, walkways and cover ways for floodgates along Coldwater River, Serial No. Eng. 22-052-49-121, to Delta Drainage & Constr. Co., Inc., Box 2526, Greenville, **$33,931.** Bids 3/1, awarded 3/16. CD 2/18.

Tex., McAllen—V. F. Neuhaus & V. V. Winsett, McAllen, irrigation lines, own forces. **$35,000.**

Tex., Raymondville—City, Charles R. Johnson, mayor, drainage mostly open ditching, to Brown & Root, Inc., Box 3, Houston, **$60,000.** James V. Curnutte, Transit Tower, San Antonio, engr.

†**Washington** — Bureau Reclamation, Dpt. Interior, Coulee Dam, earthwork, lining, pipelines, structures for Burbank pump laterals, Area B1, Spec. R1-CB-13 (Region 1), Columbia Basin Proj., to Mathews Bros., Idaho Falls, Idaho, **$174,331.** Bids 1/25, awarded 3/17. CD 1/4—ENR 1/13.

AIRPORTS AND AIRBASES

BIDS ASKED

April 18

N. Y., Idlewild—FENCING—At office Chief Engineer, Port of New York Auth., 111 Eighth Ave., New York, Zone 11, boundary fence for northeast area, Contr. NYA-57. Plans deposit $10. CD 4/27/44—ENR 3/18/44.

April 19

Kan., Garnett—AIRPORT IMPRVS.—At office J. C. Moon, city clk., City Hall, Garnett Municipal Airport, ½ mi. east of Garnett, Sects. 28 and 29 T 20 S, R 20 E. Proj. 9-14-041-801.

May 4

●**W. Va., Charleston**—HANGAR—U. S. Eng., 830 W. Broadway, Louisville 3, Ky., one 198x198 ft. structural steel frame, cinder block hangar, 25x38 ft. cinder block boiler house; 20x20 ft. rein.-con. pumphouse; one water storage reservoir, for Air National Guard Kanawha Co. Airport, Serial No. Eng-15-029-49-123. Plans deposit $15. CD 4/1—ENR 4/7.

LOW BIDDERS

Minn., Mankato—AIRPORT IMPRVS.—City, H. J. Matson, clk., City Hall, Mar. 15, clearing, grubbing, grading, draining, surf. lighting airport, from Brown, Leuil & Lundin, Mankato, **$168,964.** CD 3/9.

Minn., St. Cloud — AIRPORT IMPRVS. — City, A. R. Haberkorn, clk., City Hall, Mar. 29, 44,751 cu. yd. excav., 8,200 cu.yd. borrow, 51,000 s.yd. stabilized base, 102,600 gal. bit. material, 3,261 lin. ft. storm sewer, drainage structures, etc., from Mergarry Bros., St. Cloud. **869,868.** CD 3/18—ENR 3/24.

●**W. Va., Charleston**—AIRPORT—U. S. Eng., 830 W. Broadway, Louisville, Ky., Mar. 24, parking apron, storm sewers, 10 brick manholes, taxiway lighting, at Kanawha County Airport, Serial No. Eng-15-029-49-114, from Standard Asphalt & Tar Co., 1640 4 Ave., **$199,229.** CD 3/17.

●†**Canal Zone**—POST EXCHANGE SERVICE STATIONS—U. S. Eng., Box 5043, Ancon, Canal Zone, Corrected Bids Feb. 7, France Air Force Base Post Exchange Service, Eng-95-505-49-14. Will not re-advertise.

CONTRACTS AWARDED

Ia., Davenport—TERMINAL BLDG.—City, City Hall, terminal bldg., Davenport Municipal Airport, to Tunneliff Constr. Co., 165 Fillmore St., **$117,004.** Bids 3/24. CD 3/17.

Neb., Omaha — AIRPORT IMPRVS. — City, runway lighting at municipal airport, to Henry W. Miller Electric Co., 415 S. 18 St., **$58,608.** Bids 3/8. CD 2/24—ENR 3/3.

N. Y., Syracuse—AIRPORT BLDG.—Dpt. Parks, City Hall, general contract terminal bldg. at Clarence E. Hancock Airport, to Louis Grescani Constr. Co., Inc., Hopkins and Liverpool Rds., **$122,500.** Bids 3/21. CD 3/15—ENR 3/17.

●†**Canal Zone**—HANGAR—U. S. Eng., Box 5043, Ancon, Canal Zone, hangar, Albrook Air Force Base, Eng-06-006-Ex-11, to Pan Pacific Constr. Corp., P. O. Box E, Pedro Miguel, **$147,617.**

LATIN AMERICA

Argentina, La Plata—Province of Buenos, D. A. Basso, Calle 8, No. 56-157, C/Psol, La Plata, receiving bids May 11, constructing sewage treatment plant and aqueduct. Approx. $4,000,000.

PUBLIC BUILDINGS

BIDS ASKED

April 12

Conn., Mansfield—Controllers Office, State Office Bldg., Hartford, 2 dormitories, $400,000. Fred T. Teich, 252 Asylum St., Hartford, archt.

●**R. I., Pawtucket**—U. S. Property & Disbursing Officer for Rhode Island, 31 Stenton Ave., Providence, Zone 6, motor vehicle storage bldg., Serial No. W-37-019-NG-19. CD 3/8—ENR 3/10.

N. S., Halifax—R. M. Mackinnon, engr., c/o City, J. E. Ahern, mayor, City Hall, memorial library, Approx. $300,000. L. R. Fairn, 41 Argyle St., archt. CD 7/1—ENR 8/5.

April 14

Fla., Jacksonville—City, City Hall, motor operating circulating water valves, and misc. transmission line material and equip., for Power Plant 2, South Jacksonville. Plans deposit $2 each. Reynolds, Smith & Hills, 227 Park St., engrs.

April 15

Mass., Woburn—City Housing Auth., P. W. Linscott, chn., City Hall, 2 and 3 story brick, 68 unit housing, Maple and Webster Sts. $700,000. Arthur Manasellian & Assoc., 30 Huntington Ave., Boston, archts. CD 4/30—ENR 9/16.

Alta., Glendon — L. C. Krawchuck, clk., Glendon, hospital. Plans deposit $25. N. C. McKernan, 3 Credit Foncier Bldg., Edmonton, archt.

April 18

S. D., Isabel—City, remodeling power plant and distr. sys. $60,000. Julian Staven, Rapid City, engr.

Tenn., Lawrenceburg—Lawrence Co., hospital. $450,000. Plans deposit $100. Marr & Holman, Stahlman Bldg., Nashville, archts. CD 5/3/48—ENR 5/6/48.

Wash., Outlook—School Dist. 201, Sunnyside, school addn. and renovating existing bldg. $320,000. CD 2/2/48—ENR 2/19/48.

April 19

Conn., Putnam—City, Putnam Housing Auth., Putnam, frame homes, Eden St. Plans deposit $15. Chandler & Palmer, 113 Tyser Bldg., Norwich, archts. CD 2/4—ENR 2/17.

April 20

●**Mass., Malden**—City Housing Auth., City Hall, thirty-one 2½ story, basmt., brick houses, Linden Sect., Housing Proj. 200-1, $1,250,000. Plans deposit $5. C. F. Springall, 59 Park St., archt. CD 10/14—ENR 10/28.

April 21

†**Washington**—U. S. Eng., 19 E Poplar St., Walla Walla, design, manufacture and install three 104,000 hp. hydraulic turbines, incl. embedded parts, appurtenances and pier housings for four units for Ice Harbor Dam Power Plant, Serial No. Eng. 45-164-49-40. Extended date CD 3/2—ENR 3/10.

April 26

Calif., Tracy—Tracy Union High School Dist., Tracy, steel, stucco, concrete block, rein.-con. Tracy Union High School bldgs., incl classroom bldg., homemaking, locker and shower bldgs., gymnasium, and connecting corridors. $615,130. Plans deposit $25. Kump & Falk, 9 Main St., San Francisco, archts. CD 3/18/46—ENR 6/6/46.

†**Ga., Atlanta**—U. S. Eng., Post Office Bldg., Savannah, bldg. alterations, addns., 639 Ponce de Leon Ave., Serial No. Eng. 09-133-49-164. Extended date. CD 3/2—ENR 3/10.

N. Y., New York—Supt. School Buildings, Design & Constr., 49 Flatbush Ave. exten., Brooklyn, Zone 1, general contract P. S. 81 addn., Riverdale Ave. between W. 253 and W. 256 Sts. Plan deposit $12. CD 1/13/44—ENR 1/27/44.

April 28

Ia., Council Bluffs—Independent School Dist., Bd. Educ., Thomas McMillen, chn., Council Bluffs, 2 story, grade school. Approx. $400,000. Robert C. Robinson, 604 Standard Oil Bldg., Omaha, Neb., archt. CD 12/11/46—ENR 12/26/46.

●†**Tenn., Oak Ridge**—U. S. Atomic Energy Comm., P. O. Box 1663, high school with 1,500 seat auditorium, Inv. No. 401-19-IIA. $2,000,000-$4,000,000.

May 3

Ont., London—Huron College, London, college bldg. $500,000. O. Roy Moore, 2604 Dundas St., archt. CD 11/30/44—ENR 12/14/44.

May 5

†**Pa., Philadelphia**—Pub. Wks. Office, Phila. Naval Base, Phila., U. S. Naval Base Submarine Supply Office Bldg. 5 alterations, Spec. 21775. $25,000.

LOW BIDDERS

Mass., Wilbraham — Town Bd. Selectman, c/o L. C. Hinckley, archt. 1618 Main St., Springfield. Mar. 3, school, from R. J. Finney Co., 229 Dwight St., Springfield. **$190,800.** C. J. Mamfeld & Assoc., 36 Pearl St., Hartford, Conn., assoc. archts. CD 3/16.

Mo., Rolla—Phelps County Pub. Memorial Hospital, Bd. Trustees, F. H. Blue, pres., and D. L. Stuart, secy., Mar. 23, 2 story, brick, rein.-con. general hospital, Robert E. Hellrung Constr. Co., 3457 Morganford Rd., St. Louis, Zone 16, **$710,000.** Est. approx. $400,000. CD 2/28—ENR 3/10.

●**N. Y., Buffalo**—Dpt. Mental Hygiene, Albany, Mar. 28, **(a)** general contract **(b)** heating **(c)** plumbing **(d)** electrical work, Gowanda Bldg. (2) power house from John W. Cowper Co., Inc., Sidway Bldg., **(a1) $3,738,000 (a2) $581,700** ***from Quackenbush Co., 565 Franklin St., **(b1) $298,887 (b2) $713,832*****from George H. Drake, Inc., 218 Lexington Ave., **(c1) $368,331.** CD 3/22—ENR 3/24.

†**N. Y., Buffalo**—U. S. Eng., Engineer Park, Zone 7, Mar. 17, residence bldgs., Veterans Admin. Hospital for Veterans Admin., Vermont Ave. between H and I Sts. N. W. Wash. D. C., Eng-30-023-49-82, from Siegfried Constr. Co., 6 N. Pearl St., Buffalo, **$271,650.** Est. $279,632.

●**N. Y., Dongan Hills**—New York City Housing Auth., 63 Park Row, New York, Zone 7, Apr. 5, general contract General Charles W. Berry Houses, Proj. NYC-19, garden bldgs. bounded by Richmond Rd., Dongan Hills Ave., Staten Island Ry. and proposed street (Seaver Ave.) 209 ft. north of and parallel with Stobe Ave., from Clove Constr. Co., 356 Fulton St., Brooklyn, Zone 1, **$3,016,000*****electrical work, from Arc Electric Constr. Co., 739 Second Ave., New York, Zone 16, **$233,000*****plumbing, from Paramount Plumbing & Heating Co., 323 E. 16 St., New York, Zone 3, **$134,900.** CD 2/23.

●**N. Y., Long Island City**—New York City Housing Auth., 63 Park Row, New York, Zone 7, Mar. 29, foundations for Ravenswood Houses, Sect. 1, Proj. NYC-20, from Foss-Hallcran-Noir, Inc., 29-28-41 Ave., **$1,314,000.**

N. C., Winston-Salem—City, Mar. 29, hospital addns., alterations, from Fowler Jones Constr. Co., Reynolds Office Bldg., **$474,500.** CD 3/24.

Wash., Longview—School Dist. 122, High School Bldg., Mar. 25, school, from K. T. Henderson, Longview, **$250,724.** Wolff & Phillips, Pearson 4th Ave. Bldg., Portland, Ore., archts. CD 3/14—ENR 3/17.

Wis., Juneau—Dodge Co., Juneau, Mar. 25, general contract, Home for Aged, from Hoffman Co., Inc., Appleton, **$354,000.** CD 3/10—ENR 3/17.

CONTRACTS AWARDED

●**Ala., Birmingham**—City, City Hall, city hall, to J. A. Jones Constr. Co., Walton Bldg., Atlanta, Ga., **$1,982,200.** Bids 3/8, awarded 3/28. CD 3/11—ENR 3/17, under LB.

Conn., Norwalk—City, Water Dpt., 74 Wall St., 2 story, brick, concrete block shop, incl. offices, Belden Ave., to Thomas J. Riordan, Hoyt and Clark Sts. Approx. **$70,000.**

Ill., Geneva—State Dpt. P. Welfare, Springfield, power house addn., School for Girls, to Federal Contractors, 177 W. Madison St., Chicago, **$206,500;** boiler and stoker equip. for power plant addn., and power piping and plumbing for power house addn., to Robert Gordon, Inc., 21 N. Jefferson St., Chicago, **$103,634** and **$158,300** respectively. Grand total $468,434. C. Herrick Hammond, State Armory, Springfield, archt. CD 4/6/45—ENR 4/19/45.

Mo., St. Joseph—State Dpt. P. Health & Welfare, Sam Marsh, dir., Jefferson City, brick, concrete, stone infirmary bldg., for aged patients, State Hospital 2, to Allen Chambers, 1643 Bellview St., Kansas City, Mo., **$556,000.** Bids 3/8. CD 3/15—ENR 3/17, under LB.

●†**N. H., Manchester**—U. S. Eng., Army Base, Boston 10, Mass., boiler house, garage and personnel quarters Veterans Admin. Hospital, Eng. 19-018-49-69, for Veterans Admin., Vermont Ave. between H and I Sts. N.W., Wash. 25, D. C., to Davison Constr. Co., 1206-A Elm St., **$532,216.** Bids 3/8. CD 3/15—ENR 3/17, under LB.

N. Y., Brooklyn—Bd. Transportation, 250 Hudson St., New York, Zone 13, general contract, Ulmer Park Bus Garage, 25 and Hatway Aves., Contr. 3, to Elsas Tile & Marble Works, Inc., 238 E. 26 St., New York, Zone 10, **$834,593.** Bids 3/18—CD 3/1—ENR 3/3.

†**Pa., Pittsburgh**—U. S. Eng., 825 New Federal Bldg., site clearance and development, for veterans neuropsychiatric hospital for Veterans Admin., Vermont Ave. between H and I Sts. N.W., Wash. 25, D. C., Eng. 36-058-49-69, to Ralph Myers Contr. Corp., Salem, Ind., **$849,857.** CD 1/27—ENR 2/3, under LB.

Va., Leesburg—Loudoun Co. Hospital, Leesburg, Loudoun County Hospital alterations, addns., to W. N. Hall & Son, Middleburg, **$392,126.** Bids 3/10. (Correction cost.) CD 3/16—ENR 3/24, under LB.

●†**Alaska, Fort Richardson**—U. S. Eng., APO 942, c/o PM, Seattle, Wash., 200x600 ft. permanent depot storage, Eng. S-95-507-49-6, to Henrik Valle Co., Inc., 1407 3 Ave., Seattle, Wash., **$1,290,626.** CD 1/24—ENR 1/27, under LB.

Que., St. Laurent—Central Mortgage & Housing Corp., 1253 McGill College Ave., Montreal, 78 duplex houses, Project 1-48-F, to Louis B. Magil Co., 4720 Ridgevale Ave., Montreal. Approx. **$900,000.** Bids 3/22. CD 3/11—ENR 3/17.

COMMERCIAL BUILDINGS

BIDS ASKED

April or May

Mo., St. Louis—Our Lady of Sorrows Catholic Parish, Msgr. Bernard S. A. Stolte, pastor, 5040 Rhodes Ave., Zone 9, bldg. rehabilitation, 31x63 ft. brick, concrete front addns., 13x63 ft. brick, concrete rear addn., Kingshighway Blvd., south of Rhodes Ave., Approx. $375,000. A. F. and Arthur Stauder, 3008 S. Grand Bldg., Zone 18, archts. CD 2/11/48—ENR 3/4/48.

April 13

Ga., Atlanta—Ernest St. John, Mann, Webb & Knapp, Inc., c/o John W. Cherry, archt., Candler Bldg., department store.

April 14

Miss., Jackson—First Christian Church, c/o N. W. Overstreet & Assoc., archts., 201 N. Lamar St., Jackson, 2 story, brick, tile, stone church. Plans deposit $25. CD 9/29—ENR 10/7.

April 18

La., Crowley—American Legion Hospital, c/o Clayton J. D'Aquin, Jr. & Assoc., archts., Opelousas, hospital. CD 2/17—ENR 3/3.

April 19

●**Okla., Oklahoma City**—Medical Research Foundation, c/o Dr. John A. Lamb, Medical Arts Bldg., 3 story, 46,000 sq. ft. concrete, brick, steel medical research, $1,000,000. Coston & Frankfurt, Apco Tower, engrs. CD 3/18—ENR 3/24.

April 20

Wash., Yakima—Yakima Medical Center, Inc., Yakima, five 30 x 73 ft. to 30 x 268 ft. masonry buildings. $350,000. Plans deposit $30. T. P. Hargis, Jr., Miller Bldg., archt. CD 10/13.

April 22

Wash., Spokane—St. Augustine's Church, Bernard Ave. and 18 St., 86 x 160 ft. masonry church and rectory. $400,000. J. W. Maloney, Larson Bldg., Yakima, archts.

(Continued on page 79)

Engineered to Deliver the Lowest Cost Per-Foot-Per-Use

For Superior Concrete Forms

And for other concrete form job requirements, Harbor offers three more star performers, all backed by Harbor's name and Harbor's reputation—

★★★

SUPER-Harbord PLYCRETE—Grade-marked: EXT • DFPA • AA. For multiple re-use form work. Hot-press-bonded with phenol-type resin adhesive. ALL veneer jointed. All open defects in crossbands repaired. Re-humidified after pressing. Sanded smooth both sides. Edge-sealing and oiling optional. ★★

Harbord PLYCRETE—Grade-marked: INTERIOR • AA • DFPA. Harbord PLYCRETE has the same veneer faces as SUPER-Harbord Plycrete, but is bonded with 10-cycle moisture-resistant glues instead of waterproof adhesives. Sanded smooth both faces. Will withstand many re-uses. Factory edge-sealing and oiling optional.

★

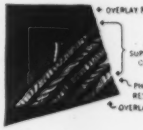
Harbor PLYFORM—Grade-marked: PLYFORM • DFPA • B-B. Bonded with water-resistant 10-cycle glues (not waterproof). Both faces are BB (solid) veneer, free from open defects. Sanded smooth. Factory edge-sealing and oiling optional.

HARBOR **Harborite**

Trade Mark Registered. Patents 2,130,697—2,130,699—2,130,841 and 2,343,740

The Superior Multiple Re-Use Concrete Form Panel

HARBORITE is today's leading re-usable concrete form panel because: 1—Hard, check-free, durable overlay faces mean near-perfect concrete surfaces; 2—Genuine SUPER-Harbord core-body (sanded smooth) means strength and durability; 3—Overlay has a "tooth" for oil, sealer, lacquer, and a slight absorptive liner effect which reduces pit voids; 4—Harborite's reddish-brown face will NOT bleed or discolor concrete.



Specify Harborite — the concrete form panel which can be used again and again until literally worn away. Harborite sizes: Widths—36" to 48"; Lengths—96" to 144"; Thicknesses —¼" to 1⅛". Thickness tolerance—$\frac{1}{64}$". Edge-sealing and mill-oiling optional.

For information concerning Harborite and other Harbor Concrete Form Panels, contact:

HARBOR PLYWOOD CORPORATION, Hoquiam, Washington

— or any of the following —

DISTRIBUTORS—California - Geo. E. Ream Co., 235 S. Alameda St., Los Angeles 12; Harbor Plywood Corporation (of California), 540 Tenth St., San Francisco 3 **Colorado** - Donald B. Richardson, 1650 Eleventh St., Denver 4 **District of Columbia** - Harbor Sales Co., Inc., 4th and Bryant Sts. N. E., Washington. **Florida** - Harbor Plywood Corporation, 2355 Dennis St., Jacksonville 4; Harbor Plywood Corporation, Box 265, Buena Vista Sta. (3627 N. E. 1st Court), Miama 37; Harbor Plywood Corporation, P. O. Box 2168 (802 No. Rome Ave.), Tampa 1 **Georgia** - Harbor Plywood Corporation, 1161 Ridge Ave. S. W., Atlanta 3 **Illinois** - Harbor Plywood Corporation, 1444 W. Cermak Road, Chicago 8 **Indiana** - E. W. Camp Plywood Co., Inc., 1001 E. New York St., Indianapolis 7 **Kentucky** - E. W. Camp Plywood Co., Inc., 825 S. 9th St., Louisville 2 **Maryland** - The Harbor Sales Co., Inc., 1501 S. Warner St., Baltimore 30 **Massachusetts** - Kimball Lumber Co., 148 Waltham St., Watertown; Lawrence R. McCoy & Co., Inc., 332 Main St., Worcester 8 **Missouri** - H. H. Horton, Harbor Plywood Corporation, 1301 R. A. Long Bldg., Kansas City 6; Fry-Fulton Lumber Co., 148 Carroll St., St. Louis 4 **Nebraska** - W. R. Stelzer, 200 Foster-Barker Bldg., Omaha 2 **New Jersey** - J. R. Quigley Co., 811 Market St., Gloucester City **New York** - Plunkett-Webster Lumber Co. Inc., 815 East 136th St., New York 54; Plunkett-Webster Lumber Co. Inc., 271 North Ave., New Rochelle; Kimball Lumber Corporation, P. O. Box 625, Schenectady **Ohio** - E. W. Camp Plywood Co., Inc., Commerce at Plum St., Cincinnati 2 **Pennsylvania** - J. R. Quigley Co., Front and Railroad Sts., Cressona; J. R. Quigley Co., 1290 S. Cameron St., Harrisburg; J. R. Quigley Co., 309 Harrisburg Ave., Lancaster; J. R. Quigley Co., 1028 N. Delaware Ave., Philadelphia 25; G. A. Whitmeyer, Harbor Plywood Corporation, 1028 N. Delaware Ave., Philadelphia 25; Wholesale Distributing Co., 36th St. and A. V. R. R., Pittsburgh 1 **Washington** - Harbord Mercantile, Port Dock, P. O. Box 998, Aberdeen; Lundgren Dealers Supply, P. O. Box 1373 (440 E. 25th St.), Tacoma 1

DRILLING CONTRACTORS

DIAMOND AND SHOT CORE BORINGS — DRY SAMPLE BORINGS

Foundation Testing for Bridges, Dams and all Heavy Structures

Also

Manufacturers of Diamond and Shot Core Drills, Accessories and Equipment

SPRAGUE & HENWOOD, Inc.

Scranton, Pa. Dept. E, U. S. A.

SIMPLER! SAFER! EASIER!

SIMPLEX JACKS

LEVER — SCREW — HYDRAULIC

TEMPLETON, KENLY & CO.

Chicago 44, Ill.

Ask for Catalog 45 NOW

New Savings with
PREFORMED
WIRE ROPE
For the few who haven't used it—but who will —Preformed wire rope promises the same kind of savings in time and money that regular users have enjoyed since 1934.
Preformed lasts longer, thus costs less to use. It saves time and money in installation and operation. It is safer to use and reduces safety costs.
So, for new savings, see your wire rope manufacturer or supplier about Preformed wire rope.

(Continued from page 77)

BIDS ASKED

Colo., Denver—E. Floyd Redding, engr. and archt., 1048 Columbine St., 4 story, 46 x 85 ft. hospital addn., for Porter Sanitarium & Hospital, 2525 South Downing St. $350,000.

●**Ill., Chicago**—Community Development Trust, 39 S. State St., seven 4 and 5 story, brick, stone, apartments Granville and Hood Sts. **$1,000,000.** Holsman, Holsman, Klekamp & Taylor, 39 S. State St., archts.

Ill., Chicago—4820 Marine Dr. Corp., c/o Frank McNally & Assoc., archts., 105 W. Madison St., 4 story, 54x150 ft., brick, reinf.-con. apartment, Margate Terrace and Marine Dr.

Ont., Toronto—J. Sugarman, archt., 76 Charles St., 24x36x120 ft., concrete, steel synagogue, for Beth Scholom Congregation, 407 Rosemary Rd.

SOON LETS CONTRACT

●**Conn., Greenwich**—Greenwich Hospital, 18 W. Putnam Ave., soon lets contract hospital addn. 750,000. Bids 3/8 rejected. Skidmore, Owings & Merrill, 5 E. 57 St., New York, 22, N. Y., archts. CD 2 23—ENR 3 3.

Fla., West Palm Beach—S. H. Kress Co., 114 5 Ave., New York, N. Y., soon lets contract department store, $300,000.

Tenn., Memphis—Christian Brothers College, c/o Regan & Weller, archts., Commerce Title Bldg., soon lets contract administration and gymnasium bldg.

Ont., Cornwall—C. H. Copeland, archt., 1117 St. Catherines St. W., Montreal, soon lets contract 1 story, 90 X 100 ft., steel, brick, concrete store and office, Pitt St., for Alex R. McLennan, c/o archt. Approx. $125,000.

Ont., London—V. J. Blackwell, 284 Dundas St., archt., soon lets contract sanatorium for Queen Alexandra Sanatorium, Col. Ibbotson Leonard, pres. $500,000. CD 1/8—ENR 2/3.

Que., Three Rivers — E. L. Demeuonourt, archt., 1425 Notre Dame St., Montreal, soon lets contract 3 story, bsmnt., 65x80 ft., brick, cement bloc'k, St. Maurice Hotel addn., Bodeaux St., for P. Belisle, 336 St. Francois Xavier St. Approx. $250 000.

LOW BIDDERS

Va., Abingdon—Johnston Memorial Hospital, Abingdon, Mar. 18, Johnston Memorial Hospital addn., from Goode Constr. Co., Johnson Bldg., Charlotte, N. C., **$651,000.** CD 2 7—ENR 2/10.

CONTRACTS AWARDED

Ala., Birmingham—Terrell Court Apts., Inc., c/o Horace Weaver, archt., Swann Bldg., 60 apartment units, to Jack A. Roberts, c/o archt. Approx. **$250,000.**

Calif., San Gabriel—Roman Catholic Archbishop, 714 W. Olympic Blvd., Los Angeles, 2 story, rein.-con., San Gabriel High School, to William Curlett, 820 W. Ester St., Long Beach, **$500,000.** Bids 2/23. CD 1/31—ENR 2/3.

Calif., Santa Clara—Pasetta Constr. Co., Park Ave. and Poplar St., 60 frame, stucco 3-bedroom residences, Homestead Rd. in Sunny Acres, Owner builds. **$500,000.** CD 3/24.

Conn., Fairfield—Frank Labbance, 731 Jennings Rd., 1 story, 4 room frame houses, Riverside Dr. Section, Owner builds, **$250,000.** Ernest Larsen, 72 Brooklawn Parkway, archt.

Conn., Hamden—V. F. Larsen Co., 434 Temple St., New Haven, twenty-one 4 and 5 story, brick, steel apartments, also bsmnt. garages, Davis St. and Whitney Ave. Owner builds **$500,000.** Douglas Orr, 96 Grove St., New Haven, archt.

Fla., Miami—Central Baptist Church, c/o contractor, general contract church, to Donald C. Stakemiller, 19 Vergua Ave., Coral Gables. Approx. **$325,000.**

Fla., North Miami—Ann Apts., Inc., c/o contractor, 58 homes, to Nichols Constr. Co., 13700 N. W. 7 Ave., Approx. **$350,000.**

Fla., North Miami—W. L. T., Inc., c/o contractor, several residential developments, to O. K. Lightfoot, 847 N. E. 125 St. Approx. **$250,000.**

Fla., Winter Park—H. C. Cone & W. A. Warrick, Jr., Winter Park, office bldg. Owner builds. Approx. **$250,000.** George H. Sphon, Winter Park, archt. CD 11 5—ENR 11 18.

Ga., Thomasville—H. B. Hunley & W. E. Crumley, Thomasville, residential development, to Terrell Singletary, Thomasville, Approx. **$250,000.**

●**Ill., Chicago**—5701 Sheridan Bldg. Corp., 5701 Sheridan Rd., 14 story, rein.-con., terra cotta apartment, separate contracts. **$2,500,000.** Karlin & Levine, Inc., 1314 S. Wabash St., archt. CD 2 24—ENR 2/26.

Ill., Chicago—Community Development Trust Co., 39 S. State St., office and 4 & 5 story brick apartments, 2130 Rosemont Ave., separate contracts, **$390,000.** Leonard Wayman & Assoc., 919 S. Michigan Ave., archts. Holsman, Holsman, Klekamp & Taylor, 39 S. State St., engrs.

●**Ill., Libertyville**—Illinois Bell Telephone Co., 212 W. Washington St., Chicago, 2 story, bsmnt., brick telephone bldg., to Kaiser Ducett Co., 80 E. Jackson St., Chicago, approx. **$1,250,000.** Holabird Root & Burgee, 180 N. Wabash St., Chicago, archts. Awarded 3/2. CD 3 8—ENR 3/10, under LB.

●**N. C., Greensboro**—Oakmont Corp., c/o Robert Barbee, archt., Greensboro, 125 homes in Kirkwood Sect. Owner builds. Approx. **$1,-000,000.**

Okla., Oklahoma City—United States Fidelity & Guaranty Co., First Natl. Bldg., 5 story, 50 x 140 ft. office at 125 N. W. First St., to Charles M. Dunning Co., 420 N. Hudson St. **$500,000.** Awarded 3/28. Coston & Frankfurt, Apco Tower, archts.

●**Pa., Harrisburg**—Penn Homes, 1519 N. Front St., 250 residences in Harrisburg and vicinity, to Earl W. Brown, 4201 Derry St., Paxtang, **$2,000,000.** Clayton J. Lappley, 1519 N. Front St., archt.

Pa., Hummelstown—Hummelstown Building & Development Co., Hummelstown, 75 residences in Hummelstown and vicinity, to Reiley A. Umberger, R. D. 2, Hummelstown, **$650,000.** Claude Greiner, Hummelstown, archt.

Tex., Denison—clyde M. Hotchkiss, Denison, low cost housing, own forces. Approx. **$250,-000,** CD 3/30.

Tex., Garland—Airlawn Constr. Co., 4624 March St., Dallas, 40 residences, day labor, **$265,000.** CD 3 29—ENR 4 7.

Tex., Houston—Hou-Tex Constr. Co., Inc., 2222 Cleburne St., duplexes and apartments, Turnberry St., own forces. **$350,000.** CD 10/8—ENR 10/28.

Tex., San Antonio—McKee Constr. Co., 161 Chevey Chase St., 10 residences, Shearer Hills. Owner builds. **$265,000.** CD 3/24.

Tex., San Antonio—Frank Robertson, Majestic Bldg., 150 residences, East Shearer Hills. Owner builds. Approx. **$750,000.** CD 2/24.

Alta., Edmonton—G. W. Goldon, 116 St., 37 houses, Owner builds. **$259,000.**

Ont., Kingston—W. H. Green, 190 College St., twenty-five, 1½ story, 24x36 ft., concrete, brick houses, North Victoria sub-division. Owner builds. **$250,000.**

INDUSTRIAL BUILDINGS

BIDS ASKED

Que., St. Johns—FACTORY—Doric Textile Mills Ltd., c/o J. M. Besso, 150 Broadway, New York, N. Y., 130 x 250 ft., concrete, steel, brick factory. A. Belanger, 128 Queen Blvd., Sherbrooke, archt. McPherson & Co. Greenville, S. C., U. S. A., engr. CD 3 4—ENR 3/17

SOON LETS CONTRACT

Ga., Atlanta—PLANT ADDNS., etc.—Scripto Mfg. Co., 423 Houston St. N. E., soon lets contract mfg. plant addns., alterations. Thomas A. Bradbury, 60 5 St. N. E., archts.

La., Shreveport — WAREHOUSE, etc. — Henry E. Schwartz, archt., Giddens Lane Bldg., soon let contract brick, steel warehouse and office, 31 Texas St., for American Radiator & Standard Sanitary Corp., 1616 Southern Ave.

Tex., Houston — WAREHOUSE — Southern Electric Supply Co., 1607 Preston Ave., soon lets contract 2 story, mezzanine, steel, brick, hollow tile warehouse, concrete slab fin. $100,000. Woodrow Alexander, West Bldg., archt. Howard, Johnson & Kelly, Scanlan Bldg., engrs.

LOW BIDDERS

Ill., Chicago—PLANT—Illinois Coil Spring Co., 2160 N. Major Ave., brick, steel plant add., from John Layky, 1644 N. Marshfield St., **$93,090.** John K. Neelie, 3713 N. Kedvale Ave., archt.

Ill., Elgin—FACTORY—Illinois Tool Wks., 1001 Grace St., 1 and 2 story, brick, steel factory, from Charles E. Gertz & Son, 57 N. Douglas St., Elgin. Approx. **$375,000.**

Tex., San Antonio—REPAIR SHOP—O. R. Mitchell Motors, 1041 Navarro St., Mar. 29, masonry auto sales, shop, service, repair, parts bldg., from F. A. Nunnelly, Box 1567. Approx. $235,000. CD 3/21—ENR 3/24.

CONTRACTS AWARDED

Calif., San Francisco — PLANT—Kortick Mfg. Co., 345 I St., galvanizing plant, to Fred Schell, 656 Mission St., Approx. **$88,000.** Austin Co., 618 Grand Ave., Oakland, engr.

Colo., Tacoma—POWER PLANT FACILITIES—Western Colorado Power Co., Durango, enlarging power plant facilities and penstock, to Ellis W. Barker Co., 302-393 Ness Bldg., Salt Lake City, Utah. Approx. **$450,000.**

Conn., Hartford — UTILITY, etc. — P. H. McGraw & Co., 780 Windsor St., 2 story utility bldg. addn. Owner builds. **$80,000.** Robert D. Burbank, 51 E. 42 St., New York, N. Y., archt.

Conn., Watertown—FACTORY—Watertown Mfg. Co., Porter St., 1 story, 55x150 ft., steel, cinder block factory, Porter St. Owner builds. **$68,000.**

Fla., Miami — WAREHOUSE—Miami Fish Producers Exchange, Inc., c/o George D. Moffat, engr., 1764 N. W. North River Dr., warehouse, to L. L. Jackson, 1760 W. Flagler St., Approx. **$300,000.**

Ga., Atlanta — PLANT—Western Electric Co., 920 Forrest Rd., 60,000 sq. ft. plant addn., to Barge-Thompson Co., 136 Ellis St. N. E., Approx. **$100,000.** Bids 2/25, awarded 3/29. CD 2 25—ENR 3/3.

Ga., Covington—WAREHOUSE, etc.— Snapping Shoals Electric Membership Corp., warehouse and office, to Southern Constr. Co., Reynolds St., Augusta, Approx. **$75,000.** Bids 3/25. CD 3 2—ENR 3/10.

Ga., Jackson—WAREHOUSE, etc.—Central Georgia Electric Membership Corp., Jackson, warehouse and office, to Southern Constr. Co., Reynolds St, Augusta, **$73,327.** Bids 3/29. CD 3 2—ENR 3/10.

Ga., Thomasville—PLANT—Georgia Packing Co., Thomasville, freezer and shipping plant, to H. & H. Constr. & Supply Co., Thomasville, Approx. **$100,000.**

Ia., Cedar Rapids—GARAGE SALES and SERVICE—Allen Motor Co., 1000 2 Ave. S. E., garage, sales and service bldg., to R. W. Rinderknecht Co., 113 F Ave. N. W., **$125,000.** CD 10/21—ENR 11/4.

Mich., Detroit—WAREHOUSE etc.—Kinsel Drug Co., 905 Hudson St., rein.-con., steel, brick warehouse and office, to Barton-Malow Co., 2631 Woodward St., Approx. **$250,000.** CD 2/21—ENR 3/3.

N. C., Burlington — PLANT—Piedmont Heights Plants, c/o contractor, mfg. plant addn., to H. L. Coble Constr. Co., Greensboro, Approx. **$300,000.**

N. D., Grand Forks—POWER PLANT—Minnkota Power Co-operative, Grand Forks, power plant addn., to Kehne Electric Co., 722 Raymond Ave., St. Paul, Minn., **$854,080.** Bids 3/1. CD 3/17—ENR 3/24, under LB.

Okla., Oklahoma City—SALES, SERVICE, etc.—Dennison Motor Co., 517 N. Robinson St., 160 x 200 ft. motor truck sales, service and storage bldg., 115 N. Shartel St., to Charles M. Suttle Co., 12 N. W. 8 St., **$160,000.** Awarded 3/24. Coston & Frankfurt, Apco Tower, archts.

Pa., Mifflin Twp.—PLANT—Fisher Body Div., General Motors Co., General Motors Bldg., Detroit, Mich., 1 and 2 story, 720x330 ft., 725,000 sq. ft. body blanking and stamping plant, to Ragnar Benson, Inc., 4744 W. Rice St., Chicago, Ill. Aroonaut Realty Div. General Motors Co., General Motors Bldg., Detroit, Mich., engr. and archt.

Tenn., Tiptonville—WAREHOUSE—**Federal** Compress & Warehouse Co., c/o contractor, cotton warehouse, to W. W. Yarbrough, 119 Adams Ave., Memphis. Approx. **$150,000.**

Tex., Baytown—PLANT—Humble Oil & Refining Co., Baytown, reconstructing Butyl plant, finishing room, own forces. **$85,000.** CD 2/19/48—ENR 2/26.

Tex., Buffalo—PLANT—Bentley & Standley, Ltd., Madisonville, refrigerated locker plant, own forces. **$75,000.** Paul C. Brentley, Burt Bldg., Dallas, archt.

Tex., Hearne — COTTON COMPRESS — Brazos Varisco, Bryan, imprv. and expanding cotton compress, force account. **$75,000.** (**Correction**—name of owner). CD 3/18—ENR 3/24 ,under CA.

B. C., Abbotsford and Kilgard—PLANT—Clayburn Co. Ltd., 850 W. Hastings St., Vancouver, fire brick plant, Abbotsford, and reconstruct plant at Kilgard. Owner builds. **$800,000.** Awarded 3/26. Swan, Rhodes & Wooster, 718 Granville St., Vancouver, engrs. CD 1/20, under B. C., Kilgard.

Ont., London—FOUNDRY— General Steel Wares, 199 River St., Toronto, 60 x 200 ft. foundry, and 80 x 100 ft. and 80 x 160 ft., brick, steel concrete factory addns., to Puthersbough Constr. Co., 320 Colborne St., Approx. **$500,000.** Awarded 3/30. O. Roy Moore, 260½ Dundas St., archt. CD 2/21—ENR 3/10.

Ont., North Bay — WAREHOUSE—**Trans** Canada Constr. Co. Ltd., Espanola, concrete, brick warehouse. Owner builds. **$75,000.**

Que., Buckingham—FACTORY—Reduction Co. of Canada, Ltd., 7 Short St., 40 x 180 ft. factory, to S. D. Miller & Son, 6999 Cote des Neiges Rd., Montreal, Approx. **$100,000.**

Que., Joliette—FACTORY—Pinatel Place Dye Wks. Ltd., 1 story, 112x160 ft., steel, block, brick bldg., concrete fdn., 30x44 ft. boiler room, Archambault St., to Lucien Durand, 576 St. Louis St. Approx. **$80,000.** Rene & Charbonneau, 6260 Cote des Neiges Rd., Montreal, archts.

Que., Montreal—PLANT—Canadian Electric Supplies Ltd., 285 Craig St., 2 story, bsmnt., 60 x 107 ft., rein.-con. plant, to Anglin-Norcross Quebec Ltd., 892 Sherbrooke St. W., Montreal, Approx. **$115,000.** G. D. Thompson, 1241 Guy St., archt.

Que., Montreal—FACTORY—McFarlane Lafevre Ltd., 1680 Papineau Ave., 3 story, bsmnt., 50 x 125 ft. concrete, brick, steel factory, to Grenon Constr. Co. Ltd., 5460 Park Ave., Approx. **$100,000.** P. Paquette, 5468 Park Ave., archt.

Que., Montreal—PLANT—Northern Electric Co. Ltd., 1600 Notre Dame St., 1 story, 180 x 180 ft., concrete, steel, brick plant, Rockfield Ave., to Foundation Co. of Canada, Ltd., 1900 W. Sherbrooke, Approx. **$150,000.** J. D. Despatie, ch. engr.

UNCLASSIFIED

BIDS ASKED

April 12

†**S. C., Georgetown**—BLOCK HOUSE—**Yards** & Docks Annex, Navy Dpt., Arlington, Va., concrete block house for diesel generator house and enclosure at Gunnery Training Center., NOY 15826. Spec. 19805.

April 13

†**D. C., Wash.**—PARKING AREAS, etc.— Dpt. Commerce, Natl. Bureau of Standards, Connecticut Ave. at Uptown St. N. W., parking areas and walks, at Natl. Bureau of Standards.

†**Ind., Evansville**—DOCK—P. Wks. Office, Ninth Naval Dist., Great Lakes, Ill., repairing, imprv. timber dock, Spec. 21706.

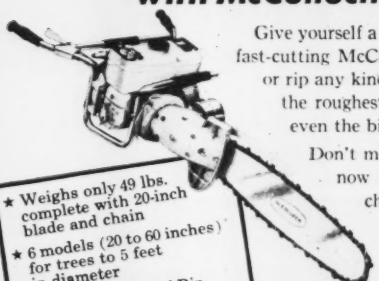
April 14

†**Conn., Hartford**—CHAIN LINK FENCE—U. S. Eng., Army Base, Boston, 10, Mass., installing chain link fence, Kenny Lane Pumping Station, Serial No. Eng-19-016-49-75.

FASTER LAND CLEARING means LOWER bids

McCULLOCH McC CHAIN SAWS

In wooded country, you can save days with McCulloch Chain Saws



Give yourself a competitive advantage by using fast-cutting McCulloch chain saws to fell, buck, or rip any kind of wood. You can use them in the roughest country—and they'll fell trees even the biggest dozer can't handle.

Don't miss a bet in figuring costs. Send now for information on McCulloch chain saws. We'll be glad to answer your questions on the use of chain saws for construction and land-clearing.

- ★ Weighs only 49 lbs. complete with 20-inch blade and chain
- ★ 6 models (20 to 60 inches) for trees to 5 feet in diameter
- ★ Full 5 hp....Special Rip-Cross chain is easily sharpened without special tools
- ★ Price...only $385.00 f.o.b. Los Angeles (20 inch model)

McCULLOCH MOTORS CORP.
6101 W. Century Blvd.
Los Angeles 45, Calif., Dept. MF

SEND FOR FULL INFORMATION

McCulloch Motors Corp.
6101 W. Century Blvd., Los Angeles 45, Calif., Dept. MF

Please rush complete information on the 5-hp McCulloch power chain saw and name of nearest dealer.

Name .....
Company .....
Address .....
City ..... Zone ..... State .....

209

ATLAS CONCRETE FORMS

WALLS • CYLINDERS • FLOORS • SEWERS

Irvington FORM & TANK CORP.
Irvington, N. Y.

Changed your ADDRESS?

Let us know so that we can keep copies of Engineering News-Record coming promptly.

TO: Circulation Dept.
Engineering News-Record
330 West 42nd Street, New York 18, N. Y.

Name .....
Old Address .....
New Address .....
Company .....

South Dakota — RURAL DISTRIBUTION LINES — Black Hills Electric Co-operative, Custer, labor for 242.2 mi. rural distr. lines, Custer, Fall River and Pennington counties, $65,000. Donald O. Flahart, 607 St. Joe St., Rapid City, engr.

April 15

Montana—RURAL DISTRIBUTION LINES—Sheridan County Electric Co-operative, Westby, labor only, 291.8 mi. rural distr. lines, Sheridan and Roosevelt Counties, $85,000. Toivo Karkainen, Helena, engr. CD 10/14—ENR 10/28.

Wash., Seattle — FIELD HOUSE — Park Comm., 2334 4 Ave., Zone 1, 2 story, 111x174 ft., brick, concrete field house with steel trusses at Loyal Heights Playfield. $385,000. Naramore, Bain, Brady & Johanson, Dexter Horton Bldg., Zone 4, archts. CD 8/28/47—ENR 9/18/47.

April 19

La., Thibodeaux—SWIMMING POOL—City, City Hall, swimming pool. Extended date. J. R. McCrary Eng. Corp., 22 Marietta St. Bldg., Atlanta, Ga. CD 3/11—ENR 3/24.

Tennessee—RURAL DISTRIBUTION LINES—Fort Loudoun Electric Corp., Madisonville, 170 mi. rural distr. lines, Loudoun Co. Extended date. A. D. McWhorter, Jr., 212½ Union Ave., Nashville, engr. CD 3/14—ENR 3/17.

April 20

Georgia—RURAL DISTRIBUTION LINES—Sumter Electric Membership Co-operative, Americus, 289.27 mi. rural distr. lines, 38.65 mi. conversion in Schley, Randolph Sumter, Marion, Chattahoochee, Terrell, Webster, Lee and Stewart Counties. Plans deposit $25. Southern Eng. Co., 699 Spring St. N. W., Atlanta, engrs. CD 10/28—ENR 11/4.

La., Evergreen—NATURAL GAS SYSTEM—Town, Town Hall, natural gas sys. $65,000. Plans deposit $10. Porter, Barry & Switzer, 211 Main St., Baton Rouge, engr.

April 21

Texas — RURAL DISTRIBUTION LINES — Southwest Texas Electric Co-operative, Inc., Eldorado, labor for 146 mi. rural distr. lines, Sutton, Crockett and Val Verde Counties. $60,000. Plans deposit $25. Extended date. Beavers & Lodal, 1408 Transit Tower, San Antonio, engrs. CD 3/22—ENR 3/31.

April 28

California — TRAFFIC SIGNAL SYSTEMS, etc.—State Div. Hy., State Bldg., Los Angeles, traffic signal sys. at Palisades Beach Rd., and Acliff Ave. in Santa Monica and Sepulveda Blvd. and Constitution Ave., Los Angeles Co. G. T. McCoy, P. Wks. Bldg., Sacramento, state archt.

About May 1

Miss., Perkinston — STADIUM — Perkinston Junior College, Perkinston, stadium. Approx. $50,000. John T. Collins, Biloxi, archt.

May 10

†Arizona and Nevada—SUB-STATION—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars Casa Grande and Eloy, Ariz., package-type substations, incl. switching structures, for ED 2 and ED 4 substations, Davis Dam Proj., Spec. 2628. L. N. McClellan, ch. engr.

†Washington — TRANSFORMERS — Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars Cedair, air-cooled transformers and resistors for Grand Coulee Power Plant, Spec. 2626.

SOON LETS CONTRACT

Fla., Ocala—SWIMMING POOL—Red Gate Hotel Court, Ocala, soon lets contract swimming pool. E. Moorhead Eng. Co., Ocala, engr.

LOW BIDDERS

†Arizona and Nevada — TRANSMISSION LINE—Bureau Reclamation, Dpt. Interior, Aviola Bldg., Phoenix, Ariz., Mar. 25, Coolidge-ED No. 5, 115 kv. transmission line, using (1) aluminum conductor; (2) copper conductor (3) copperweld-copper conductor, from Vyne Brothers Electric Co., Prescott, Ariz. **(1) $200,569 (2) $248,200 (3) $250,825.** CD 3/15—ENR 3/17.

Calif., San Jose — GRANDSTAND—Santa Clara Fair Assn., c/o Bd. Supervs. Santa Clara Co., Courthouse, Mar. 28, 83 x 400 ft. rein.-con., steel grandstand, horse barn, locker rooms at Fairgrounds, from O. E. Anderson, Box 251, San Jose, **$409,543.** CD 3/14—ENR 3/17.

Calif., Susanville — GRANDSTAND—Lassen Co., Courthouse, rejected bids Feb. 28, steel, cement floor grandstand at Lassen County Fairgrounds, LB, **$63,121.** CD 3/14—ENR 3/17, under LB.

Ia., Ames—STORAGE SHEDS—State Hy. Dpt., Ames, Mar. 29, remodeling Storage Sheds 3 and 4, from John Lippert, Oelwein, **$61,800.** CD 3/16—ENR 3/24.

Kansas—RURAL DISTRIBUTION LINES—Butler Rural Electric Co-operative, Inc., J. M. Baker, mgr., Eldorado, Mar. 24, 204.56 mi. rural distr. lines, Butler, Sedgwick, Cowley, Harvey and Marion Counties, from J. & J. Constr. Co., First National Bldg., Oklahoma City, Okla., **$72,632.** CD 3/22—ENR 3/31.

Mass., Boston—PIER—Port of Boston Auth., Commonwealth Pier 5, South Boston, Mar. 24,

Contr. 8, superstructure W-1, Hoosac Pier 1, South Boston, from Volpe Constr. Co., 54 Eastern Ave., Malden, **$667,310.** CD 3/2—ENR 3/10.

●†**Nebraska** — RAILROAD RELOCATION—U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo., relocating Oxford branch of the C. B. and Q. R. R. incl. 19.78 mi. track, roadbed, etc. Proj. Eng-23-028-49-136, in Franklin and Harlan Counties, from Morrison-Knudsen Co., Inc., 610 Title Guarantee Bldg., 319 Broadway, Boise, Idaho, **$2,966,000.** Bids 3/11. CD 3/16—ENR 3/24, under LB.

South Dakota — RURAL DISTRIBUTION LINES — Rosebud Electric Assn., Winner, Mar. 23, 241 mi. rural distr. lines, Tripp Co., from Mork Hardware & Electric Co., Clarkfield, Minn., **$283,676.** CD 3/9—ENR 3/17.

†**Washington**—RAILROAD RELOCATION—U. S. Eng., 19 E. Poplar St., Walla Walla, cancelled bids to have been opened Mar. 30, relocating 17.8 mi. sect. of Spokane, Portland and Seattle Ry., incl. roadway grading, etc. Serial No. Eng-45-164-49-34. CD 2/28—ENR 3/10.

†**Wyoming and Nebraska** — OVERHEAD GROUND WIRES—Bureau Reclamation, Dpt. Interior, Bldg 1-A, Denver Federal Center, Denver, Colo., Mar. 24, installing overhead ground wires on 94 mi. Cheyenne Gering 115 kv. transmission line, Kendrick Proj. Spec. 2584 from Flora Constr. Co., 1717 E. Colfax Ave., Denver, Colo., **$61,302.** CD 3/14.

†**Canal Zone, Quarry Heights**—SWIMMING POOL, etc.—U. S. Eng., Box 5043, Ancon, Canal Zone, rejected bids Feb. 16, swimming pool and bathhouse, Serial No. Eng-96-505-49-11. Will not re-advertise. CD 2/9.

CONTRACTS AWARDED

†**Arkansas** — POWER TRANSFORMERS — U. S. Eng., 300 Broadway, Little Rock, power transformers Bull Shoals Dam, White River, Serial No. Eng-03-030-49-17, to Westinghouse Electric Corp., 707 Boyle Bldg., Little Rock, **$451,361.**

Ill., Kankakee — DRIVE-IN-THEATRE — Reuben Levine, 817 E. 81 Et., Chicago, drive-in- theatre, on 15⅓ acre tract, Fair St., north of U. S. 54, Owner builds, **$100,000.**

Ill., LaSalle—DRIVE-IN-THEATRE—Regla Theater Corp., c/o Alger Theater Corp., 225 Gooding St., and Alliance Theatre Corp., 231 S. LaSalle St., Chicago, drive-in theater, 11 acre site on U. S. 6, former Tri City Speedway tract 3 mi. east of here, to Charles Eichelkraut & Son, Ottawa, Approx. **$150,000.**

Iowa—RURAL DISTRIBUTION LINES—South Crawford Rural Electric Co-operative, James Morrow, mgr., Denison, 96 mi. rural distr. lines, sys. imprvs., Crawford Co., force account. Approx. **$453,000.** CD 10/22—ENR 11/4.

Ky., Madisonville—DRIVE-IN-THEATRE—Tri State Amusement Co., Evansville, Ind., Day Dream Drive-in Theatre, ¼ mi. north of here, U. S. 41, to Ruby & Co., Madisonville, Approx. **$80,000.**

Missouri—RURAL DISTRIBUTION LINES—Co-Mo Electric Co-operative, Tipton, labor only, 287.02 mi. rural distr. lines, Moniteau Co., to Howard Constr. Co., 1419 N. Asage St., Sedalia, **$113,689.** CD 3/4.

Mo., St. Louis—UNDERGROUND PARKING GARAGE—Hotel Chase Inc., 212 N. Kingshighway, St. Louis, Zone 18, rein.-con. steel underground parking garage, under present lawn of hotel, Kingshighway at Lindell Blvd., to Sam Koplar, Park Plaza Hotel, 220 N. Kingshighway, Zone 8, Approx. **$73,850.** Harold Koplar, 212 N. Kingshighway, Zone 8, archt. Brussell & Viterbo, Arcade Bldg., 812 Olive St., Zone 1, structural engr.

Tex., Beeville—SWIMMING POOL, etc.—Beeville Country Club, Beeville, rein.-con. swimming pool and wading pool to M-J Constr. Co., Beeville, **$76,000.**

Tex., San Antonio—DISTRIBUTION LINES—Pub. Serv. Bd., 201 N. St. Marys St., addnl. electrical distr. lines, in outlying districts, force account. **$225,000.** CD 11/11/48—ENR 11/25/48.

Tex., Waco — LIGHTING SYSTEM — City, (Texas Power & Light Co., sponsors and financiers), 2nd phase vapor street lighting sys., force account. **$150,000.** CD 11/17.

Wash., Seattle — LIGHTING — City, County-City Bldg., Zone 4, installing safety lighting in Aurora Ave., to D. W. Close Co., 2727 11 Ave. S W., **$56,625.** Est. $60,738. R. W. Finke, city engr. CD 3/17/48—ENR 4/1/48.

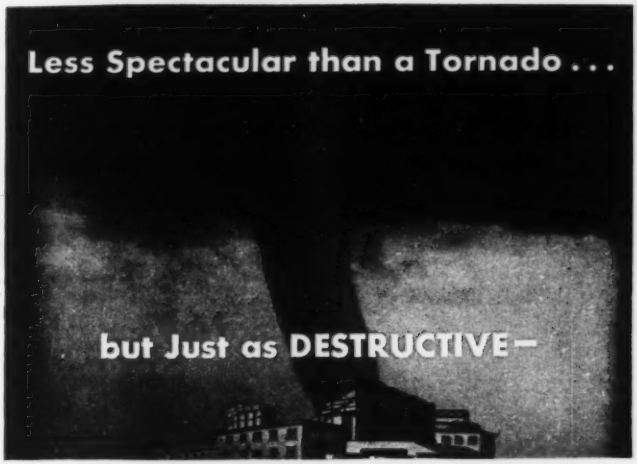
Alta., Edmonton—PARK and PLAYGROUND—Municipality, park and playground, own forces. **$80,000.** A. W. Haddon, city engr. CD 9/6/45—ENR 9/20/45.

Manitoba—TRANSMISSION LINES—Winnipeg Electric Co., Notre Dame and Albert Sts., 48 mi. transmission line from Seven Sisters hydro plant to Transcona, to Schumacher MacKenzie Ltd., 334 Main St., Winnipeg, **$880,000.**

N. S., Kentville—DAM, etc.—M. A. Condon, Kentville, concrete dam, automatic sluice gate, overnight cabins, on West Meadow, **$90,000.** Owner builds.

Ont., Toronto—BLEACHERS—Municipality, bleachers, Long Pond Centre Island, own forces. **$50,000.** M. Stewart, city engr.

Sask., North Battleford—DUCK-BREEDING GROUNDS—Canadian Ducks Unlimited, Reno, Nev., U. S. A., duck-breeding grounds, near here, and on Athabaska delta, near Lerser Slave Lake, day labor, Approx. **$280,000.**



RUST

Costs the Nation $6,000,000,000* Yearly!

Day and night—*twenty-four hours a day*—rust gnaws at your property. Not as dramatic as a tornado or other fear-inspiring disaster, rust costs you plenty in a year's time. You pay your full share of the nation's annual $6 billion loss from rust . . . unless you protect iron and steel surfaces against this *metal-consuming* menace.

RUST CAN BE STOPPED! Industry, railroads and public utilities find Rust-Oleum the best answer to their rust problems. It seals the surface so thoroughly that rust can't get started. Applied to iron and steel—even where rust has already begun—Rust-Oleum resists destructive conditions . . . rain, snow, dampness, salt air, heat, fumes and ordinary weathering.

*Estimated on the basis of 2% wastage of iron and steel due to rust.

● *Get the Facts!*

Stop this destruction. Metal replacement is costly! Save your property with Rust-Oleum. It gives lasting protection. Tell us your rust problems. We'll send you specific recommendations promptly. See our complete catalog in Sweet's, or write us today for your copy.

Rust-Oleum is available for immediate delivery through Industrial Distributors in all principal cities . . . who stock Rust-Oleum and other factory supplies for your convenience.

RUST-OLEUM CORPORATION
2475 Oakton Street, Evanston, Illinois

RUST-OLEUM
Stops Rust!

CONSTRUCTION REPORTS—Third Section

WATER SUPPLY

BIDS ASKED

April 18

Ill., Paris—City at office F. L. McCord, city clk., City Hall, electrical and pumping equip. Municipal Water Treatment Plant. CD 12/19/45—ENR 1/10/46.

April 19

California—State Div. Architecture, P. Wks. Bldg., Sacramento, water sys., for N.W. Division of Beaches and Parks, Perry Creek State Park, Patrick Point, and Burlington State Park, Humboldt Co. and Edward R. Hickey State Park, Mendocino Co. Anson Boyd, state archt.

Tex., Fort Worth—City, W. O. Jones, city mgr., laying 12, 18 and 24 in. c.i. watermains, install valves and fittings, constr. valve vaults in connection therewith in various parts of town. $100,000. Plans deposit $15. Joe J. Rady, 811 Insurance Bldg., engr. CD 2/4—ENR 2/17.

April 20

Tex., Frankston — City, WW sys. imprvs., extens. $50,000. Koch & Fowler, Great Natl. Life Bldg., Dallas, engrs.

April 26

Ia., Council Bluffs—City, City Hall, WW equip., Narrows Intake, Missouri River. Burns & McDonnell, 107 N. Linwood Bldg., Kansas City, Mo., engrs. CD 5/20—ENR 6/10.

LOW BIDDERS

Conn., Hartford—Metropolitan Dist. Water Bureau, Bd. Contr. & Supply, 650 Main St., Mar. 24, furnishing 460 tons reinforcing steel, Contr. 151, from Scherer Steel Co., 25 Lewis St., **$53,262.** CD 3/15—ENR 3/16.

Ky., Newport—City, City Hall, Mar. 29, Contr. 1, water treatment plant structures, from McGraw Eng. Co., Lexington, **$281,885***** Contr. 2, filter equip., pumps, piping, and valves, from E. W. Bacharach & Co., Rialto Bldg., Kansas City, Mo., **$305,000***** Contr. 3, raw water pump, Ohio River Pumping Station, from Dravo Corp., 517 Main St., Cincinnati, O., **$56,609.** CD 2/16—ENR 2/24.

●**Md., Baltimore**—Mayor & City Council, City Hall, Mar. 30, 12,500 lin. ft. 30 and 42 in. watermains, appurtenances, under water sections, across Harbor and Patapsco River, Lazaretto-Fort McHenry, Fairfield watermains, from McLean Contg. Co., 1301 Fidelity Bldg., **$1,866,000.** CD 3/15—ENR 3/17.

Pa., Embreeville—Dpt. Property & Supplies, 18 and Herr Sts., Harrisburg, Mar. 30, water distr. sys. at Embreeville State Hospital from Schmaltz Eng. Co., Kennett Square, **$196,116.** CD 2/4—ENR 3/10.

Tex., Muleshoe—City, Mar. 30, WW, elevated steel water storage, c.i. mains, supply well, etc., from Western Constr. Co., P.O. Box 1404, Hobbs, N. M., **$84,002.** Est. $45,000. CD 3/14—ENR 3/17.

Wash., Leavenworth—City, City Hall, Mar. 29, pump station and infiltration gallery, from Everett McKellar, Chelan, **$38,800.** CD 3/18.

CONTRACTS AWARDED

Que., St. Johns—Municipality, watermains, own forces. Approx. **$70,000.** E. Gaudette, city engr.

SEWERS, WASTE DISPOSAL

BIDS ASKED

April 18

R. I., Providence—Bd. Contr. & Supply, City Hall, 4 story, bsmnt., 48x50 ft. sludge incinerator, incl. boiler, oil pump, ash hopper, Fields Point. Havens & Emerson, 233 Broadway, New York, N. Y., engrs. CD 1/6/47—ENR 1/23/47.

April 19

†N. M., Albuquerque—U. S. Eng., P.O. Box 1538, main outfall sewers, 9,140 lin. ft. 18 in. pipeline, 19 manholes, 4 mi. southeast of here, Serial No. 291-49-93. $75,000.

April 20

Ill., Peoria—Greater Peoria Sanitary Dist., foot of Darst St., sewage pump. station, Galena Rd.; sewage pump. station for Grand View; 4,300 lin. ft. 8 and 10 in. sewers, Prod. 12SD; 1,600 lin. ft. 8 and 10 in. sewers, Prod. 13SD, and 4,500 lin. ft. 30 in. rein.-con. sewer pipe. Plans deposit $10, each. CD 7/20—ENR 7/22.

April 21

S. C., Sumter—City, City Hall, Fulton Street Sewage Pumping Station and sewerage sys. extens. Plans deposit $20. Palmer & Malone, Sumter, engrs. CD 1/10/46—ENR 1/24/46.

April 25

Calif., San Jose—City, City Hall, sanitary sewer separation project, Unit 3, incl. 4.8 mi. concrete sanitary storm sewers. Approx. $50,000. Plans deposit $25. Harold J. Flannery, City Hall, city engr. CD 10/24/45—ENR 11/15/45.

Kan., Salina — City, City clk., Chas. E. Banker, City Hall, addnl. facilities, Sewage Disposal Wks. Plans deposit $25. Wilson & Co., 223 N. Santa Fe St., Salina, engrs. CD 7/2/47—ENR 7/24/47.

LOW BIDDERS

Calif., Los Angeles—City, Bd. P. Wks., 153 City Hall, Mar. 30, 10,172 ft. 6- to 33-in. sanitary sewers in De Soto Ave. and Sherman Way Sewer Dist., from Bebek & Berkich, 5025 E. Slauson St., **$210,455.** CD 3/10—ENR 3/17.

Tex., Muleshoe—City, Mar. 30, sanitary sewers, incl. collection lines, 3 lift stations, force mains, Imhoff tank, from Western Constr. Co., P.O. Box 1404, Hobbs, N. M., **$90,400.** Est. $65,000. CD 3/14—ENR 3/17.

CONTRACTS AWARDED

Tex., Dallas—Homer W. Snowden, 6336 Richmond St., sanitary sewers, eastern sewers, eastern sect. of city, to C. H. Burns & Son Constr. Co., c/o Koch & Fowler, engrs., Great Natl. Life Bldg. Approx. **$85,000.**

Ont., Crystal Beach—Municipality, sewerage sys., Rolostock Rd., to Carroll Sharpe Constr. Ltd., 43 Scott St., Toronto. CD 1/19—ENR 1/27.

BRIDGES

BIDS ASKED

STATE HIGHWAY LETTINGS

April 21	**April 26**
New Jersey	**Texas**
April 15	**April 27**
Washington	**California**
April 22	**April 29**
Pennsylvania	**Georgia**

LOW BIDDERS

California—State Div. Hys., Sacramento, Mar. 30, railroad overhead consisting of steel beam spans supported on rein.-con. bents and abutments on rein.-con. piles on East Shore Freeway at High St., Alameda Co., from A. Soda & Son, 5231 Grove St., Oakland, **$684,931.** CD 3/7—ENR 3/10.

STREETS AND ROADS

BIDS ASKED

STATE HIGHWAY LETTINGS

April 12	**April 21**
Iowa	**California**
British Columbia	**April 22**
April 13	**Pennsylvania**
Colorado	**April 26**
British Columbia	**Texas**
April 14	**April 27**
New Hampshire	**California**
British Columbia	**April 28**
April 15	**California**
Washington	**Montana**
April 19	**April 29**
Colorado	**Georgia**
April 20	
Louisiana	

April 12

Colo., Colorado Springs—City, R. F. Sonnekson, clk., City Hall, approx. 50,000 lin. ft. curb, 6" gutter and approx. 80,000 sq. ft. 4 and 6 in. sidewalks, apprcx. $50,000. Plans deposit $50. CD 6/4/45—ENR 6/14/45.

Neb., Omaha—City, City Hall, paving alleys and streets, part grading, curbing partly, drainage, in 10 paving districts. $60,000. E. W. Woodbridge, city engr. CD 1/26.

Tex., Fort Worth—City, W. O. Jones, city mgr., paving S. Main St. from M. K. & T. underpass to G. C. and S. F. overpass, 12,730 sq. yds. permanent type paving, $165,000. Plans deposit $10. C. M. Thelin, Dir. Pub Wks., engr. CD 10/11/45—ENR 11/1/45.

April 22

Wis., Monroe—City, City Hall, c. conc. paving and watermain on city square, 7,000 cu. yd. excav., 1,100 ft. curb and gutter removed, 2,800 cu. yd. sand gravel fill, 12,500 cu. yds. c. conc., 1,100 concrete curb and gutter, 230 ft. storm sewer, 1,860 ft. watermain, 530 ft. water service connections, 450 ft. underground telephone duct. $95,000. Plans deposit $10. Ward & Strand, 1 W. Main St., Madison, engrs. CD 6/16/44—ENR 7/13/44.

April 26

Pennsylvania—Pennsylvania Turnpike Comn., 11 N. 4 St., Harrisburg.

Lebanon and Lancaster Counties—grading, drainage, structures, paving 5.33 mi. Sect. 24A, Philadelphia Extens. from point 260 ft. west of L. R. 38032 in S. Londonderry Twp., easterly 28,124 ft. to point 3,850 ft. east of the Reading and Cornwall R. R., Penntownship. Plans deposit $50. Michael Baker, Jr., Rochester, engr. CD 6/9—ENR 6/24.

April 28

†N. M., Albuquerque—U. S. Eng., P. O. Box 1538, Albuquerque, addnl. bit. roads, Serial No. Eng-29-005-70. Approx. $50,000.

Md., Baltimore—Mayor & City Council, City Hall sheet asph. paving streets, Contr. 949, to National Paving & Contg. Co., 4200 Menlo Dr., **$119,824.** Awarded 3/30; Contr. 950, to Mahoney Bros., 24 Knickerbocker Bldg., **$119,193.** Awarded 3/31. Bids 3/30. CD 3/24.

CONTRACTS AWARDED

Md., Baltimore—Mayor & City Council, City Hall, sheet asph. resurf. streets, Contr. 951, to Arundel Constr. Co., Inc., 4420 E. Eager St., **$112,070.** Awarded 3/31. J. H. McKay, hys. engr.

Nevada—State Hy. Dpt., Carson City, Mar. 31, 16.209 mi. highway from 1½ mi. north of Boone Springs to White Horse Pass Elko Co. to Isbell Constr. Co., S. Virginia Rd., Reno, **$365,685.** CD 3/23.

Tex., Dallas—Clearview Park, Inc., c/o D. Elliott & Hub Hill, 2600 S. Hampton St., asph. paving Mountain Lake Rd. and S. Hampton St., to R. J. Murphy, 1655 McAdams St., **$70,000.** Brown & Brown, 1905 N. Harwood St., engrs.

Tex., Dallas—Homer W. Snowden, 6336 Richmond St., asph. paving 4 mi., concrete curbing and gutters, eastern sect. of city, to C. H. Burns & Son Constr. Co., c/o Koch & Fowler, engrs., Great Natl. Life Bldg. Approx. **$150,000.**

Wash., Yakima — Yakima Co. Courthouse, road constr. in Tieton Area, to C. & E. Constr. Co., Yakima, **$76,833.** Est. $77,225. CD 3/18.

LOW BIDDERS

California—State Div. Hys., Sacramento, Mar. 30, imported base surf. and apply prime coat and seal coat 19.4 mi. etween State T. 1. south of Hopland at State Rt. 70 at Talmage Mendocino Co., from Nevada Constructors, Inc., 1293 E. 2 St., Reno, Nev., **$165,637***** plant mix on cement treated surf. 85 mi. between Sherwood Rd., and Sapp Creek, Mendocino Co., from Clements & Co., Box 277, Haywood, **$238,955**** plant mix on cement treat surf. constr., concrete slab bridge over Spring Creek 8.5 mi. on 2 small bridge over A. C. I. D. Canal between Anderson and Clear Creek, Shasta Co., from Frederickson & Watson Constr. Co., 873 81 Ave., Oakland, **$742,432***** plant mix on cement treated surf. 3.2 mi. W. Olive St., between 3½ mi. west of Porterville and Porterville, Tulare Co., from Ted F. Haun, 324 Princeton St., Fresno **$86,814.** CD 3/7—ENR 3/10.

Calif., Los Angeles—City, P. Wks., 153 City Hall, Mar. 30, imprv. Valleyheart Dr. between Radford and Whitsett Ave., from Griffith Co., 1060 S. Broadway, Los Angeles, **$87,146.**

Maryland—State Hy. Dpt., Baltimore, Mar. 29, b. conc resurf. 1.55 mi. Spec. B, along section U. S. Rt. 50 from S. R. 2 at Parole to Annapolis, AA-409-315, Anne Arundel Co., from Rituminous Constr. Co., 3301 Ridgewood Ave., Baltimore, **$51,299.** CD 3/23.

Md., Baltimore—Mayor & City Council, City Hall, c. conc. street paving, Contr. 952, from Carozza-Hamill & Co., 10 W. 25 St., **$85,074.** J. H. McKay, hys. engr.

Tex., Houston—Harris Co., Courthouse, Mar. 28, asph. paving 4.9 mi. Toddville Rd and 2.98 mi. Stella Link Rd., from Holland Page Co., Georgetown and Austin Hy., Austin, **$119,345** est. $125,000 and **$74,387** est. $100 respectively. Cancelled bids have been opened Mar. 28, asph. paving 3.57 mi. Ramsey Rd. **$90,000**, Howe & Wise, 4119 San Jacinto St., engrs. CD 3/8—ENR 3/10.

Tex., San Antonio—Bexar Co., Charles W. Anderson, judge, Courthouse, project indefinitely postponed, double asph. surf. treatment approx. 12 mi. Precinct 1, **$75,000**; approx. 8 mi. Precincts 2 and 3, **$60,000**; approx. 12 mi. Precinct 4, **$75,000.** CD 3/21—ENR 3/24.

EARTHWORK, WATERWAYS

BIDS ASKED

April 13

B. C., Nanaimo—Secy., c/o Dpt. P. Wks., Hunter Bldg. Ottawa, Ont., dredging 15,800 cu. yd. sand, silt, shells, and bark. Approx. $31,600. R. Blais, c/o owner, engr.

Que., Ruisseau Leblanc—Secy., c/o Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., dredging 28,750 cu. yd. sand and gravel. Approx. $52,000. R. Blais, c/o owner, engr.

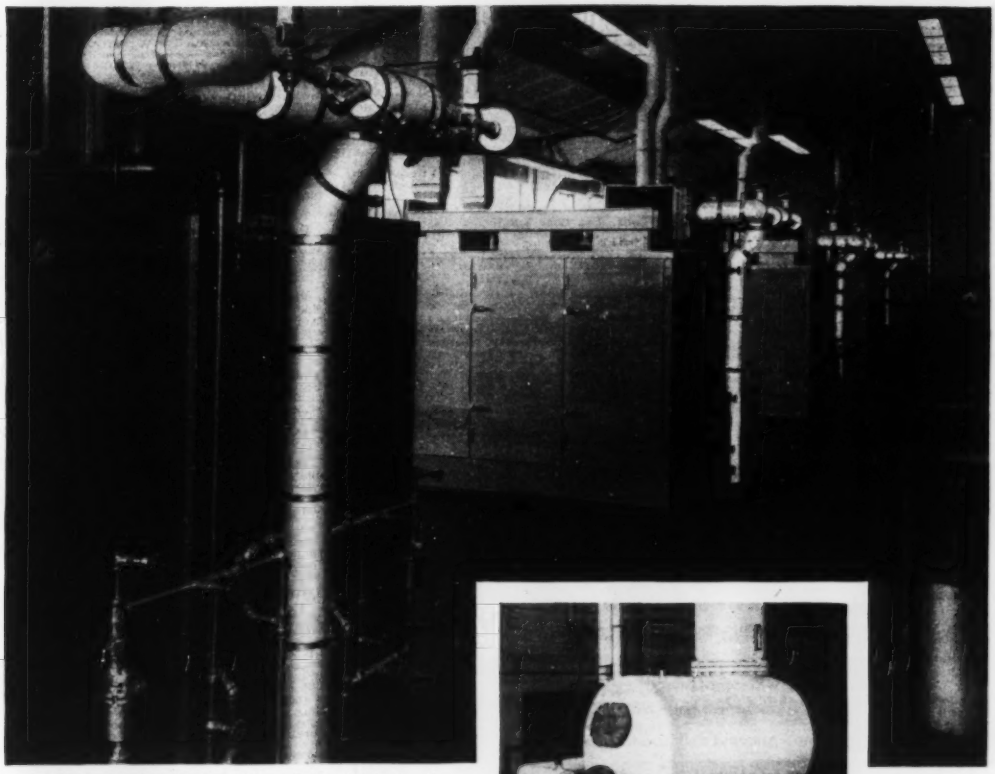
About April 16

†Ill., Springfield—AIRPORT FACILITIES—U. S. Eng., 320 Merchandise Mart., Chicago, Zone 54, two 130x160 ft. portable steel hangars, 2 story masonry lean-to, masonry boiler house, water supply and distr. lines, storm drains, sanitary sewer lines, electrical distr. sys., paved apron, roadway, sidewalks, etc., Illinois National Guard Facilities, Capitol Airport, Serial No. Eng., 11-032-49-73. Extended date. CD 3/18—ENR 3/24.

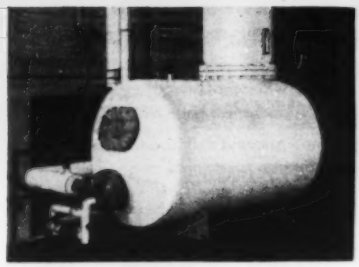
April 21

†Montana—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., penstocks, pumping intake, and outlet conduit liners, Canyon Ferry Dam, Canyon Ferry Unit, Missouri River Basin Proj., Spec. 2577. Extended date. CD 3/23—ENR 3/31.

(Continued on page 84)



Drying closets in plant of The Bayer Company Division of Sterling Drug, Inc., Trenton, N. J. The 60-lb. steam pipes are covered with K&M "Featherweight" 85% Magnesia Insulation, 2 inches thick, canvas pasted and banded.



Reclaim Solvent Still in the Trenton plant. Tank and tower are insulated with 2-inch 85% Magnesia Block, finished with asbestos cement; steam line with 2-inch thick 85% Magnesia; return line with Standard Thick 85% Magnesia.

Where temperature control is important—

Nature made Asbestos...
Keasbey & Mattison has made it serve mankind since 1873

K&M best in asbestos ®

K&M "Featherweight" 85% Magnesia Pipe Insulation

In the Trenton, N. J. plant of The Bayer Company Division of Sterling Drug, Inc. temperature control is vastly important. Insulation of *known* dependability is essential.

K&M "Featherweight" 85% Magnesia Pipe Insulation was used because in a wide variety of applications it has proved efficient and durable. It combines the high insulating properties of basic Carbonate of Magnesia with the proper amount of clean Asbestos Fibre as a binding element. It is extremely light in weight, easy to apply, fire-proof, mechanically strong. And is supplied in a wide range of sizes and weights.

K&M Distributors, located strategically throughout the country, are experts on the application of K&M insulating materials. Let them help you make important savings in your plant. Write us for further information.

KEASBEY & MATTISON
COMPANY • AMBLER • PENNSYLVANIA

(Continued from page 82)

May 3

†California—Bureau Reclamation, Dpt. Interior, Bld. 1-A, Denver Federal Center, Denver, Colo., radial gates, radial-gate hoists for Tule River check, Station 5163 plus 49.93 Deer Creek check, Station 5534 plus 74.79, Tule River Wasteway, Station 5161 plus 81.00 and Deer Creek Wasteway, Station 5534 plus 16.46 Friant-Kern Canal, Spec. 2630. L. N. McClellan, ch. engr.

LOW BIDDERS

●†Louisiana—U. S. Eng., foot of Prytania St., New Orleans, Zone 9, Mar. 29, 3,840 cu. yd. semi-compacted embankment, etc., Morganza Control Structure, Point Coupee Parish, Serial No. Eng. 16-047-49-239, from Grenada Dam Constructors, Inc., P. O. Box 1105, Grenada, **$1,555,113.** Est. $1,250,000. CD 3/2—ENR 3/16.

●Pennsylvania—Dpt. Forests & Waters, 404 Education Bldg., Harrisburg, Mar. 30, Auburn Desilting Basin 1, on Schuylkill River between Auburn and Landingville, Schuylkill Co., from Arthur A. Johnson Corp., Sunbury, **$1,481,000.** Est. $2,500,000. CD 2/23—ENR 3/3.

Pennsylvania—Dpt. Forests & Waters, 404 Education Bldg., Harrisburg, Mar. 30, 2 silt impounding basins on Schuylkill River Desilting Proj., Basin No. 15, Sanatoga site, from Nellow L. Teer, Durham, N. C. **$212,478;** Basin No. 18, Lower Vincent site, from S. J. Groves & Sons, Royersford, **$170,170.** Est. $600,000. CD 3/15—ENR 3/17.

CONTRACTS AWARDED

●†California—U. S. Eng., 751 S. Figueroa St., Los Angeles, Los Angeles River Imprvt. Tujunga Wash to Whitsett Ave. River Mile 37.17 to River 38.61, Los Angeles Co., Serial No. Eng-04-353-49-47, to Matich & Yeager, P. O. Box 390, Colton, **$1,220,694.** Bids 3/4, awarded 3/29. CD 3/10—ENR 3/17, under LB.

AIRPORTS AND AIRBASES

BIDS ASKED

April 14

Minn., Worthington—AIRPORT—City, G. S. Thompson, clk., City Hall, gravel base, bit. surf. apron, taxiways, roads and parking, etc., municipal airport. $50,000. Plans deposit $5. F. L. Baker, Blue Earth, engr.

†Tex., Corpus Christi—TAXIWAYS—Yards & Docks Annex, Navy Dpt., Arlington, Va., taxiways between runways 17 and 22 at Cabaniss Field. Extended date. CD 3/29—ENR 3/31.

April 19

Wis., Wausau — AIRPORT — City, grading, paving, lighting airport, 702,783 cu. yd. excav., 1,430 ft. 30 in. storm sewer, drainage structures, 8,889 sq. yd. concrete slab and 81,671 sq. yd. bit. paving, airport lighting, moving hangar and building, new foundation, $70,000. Plans deposit $25. J. Donohue Eng. Co., 608 N. 8 St., Sheboygan, engr. CD 1/15/47—ENR 2/6/47.

April 21

†Calif., Point Mugu—ROADS, etc.—Office of Officer-in-Charge of Construction U. S. Naval Air Missile Test Center, Point Mugu, roads, parking areas, drainage, U. S. Naval Air Missile Test Center, Spec. 22075. Plans deposit $30; Laguna Peak Rd., U. S. Naval Air Missile Center, Spec. 20616. Plans deposit $20.

Wis., Milwaukee — AIRPORT — Milwaukee Co., Courthouse, airport addns., General Mitchell Field, 654,660 cu. yd. grading; 81,150 sq. yds. c. conc.; 8,490 sq. yds. concrete paving removed; 17,970 ft. underdrains, 8,425 ft. storm sewers; underground cable ducts; 93,550 sq. yd. granular subbase course, etc. Plans deposit $25. T. F. Cosgrove, c/o owner, airport engr. CD 11/19—ENR 12/9.

April 22

Wis., Madison—RUNWAY LIGHTING—City, airport runway lighting, $80,000. Plans deposit $15. Carl C. Crane, Inc., 2702 Monroe St., engr.

April 26

†Calif., Ontario — DIRECTION CENTER — U. S. Eng., 751 S. Figueroa St., Los Angeles, tactical air direction center for 149th Aircraft Control Warning Squadron California National Guard, Serial No. 04-353-49-60. $220,000.

LATIN AMERICA

Argentina—Ministerio de Obras Publica Direction Nacional de Navagacion y Publica, Buenos Aires, received designs with accompaning bids for construction for Riachuelo Tunnel to carry 4 lane superhighway from Buenos Aires to Mar del Plata, incl. 2 parelled tunnels, from Pilades Franki, Liege, Belgium, **127,000,000** Pesos; SADOPYCE and Knappen Tippetts Abbett Eng. Co., 280 Madison Ave., New York, N. Y., U. S. A. **143,000,000** Pesos; Grimoldy Bullfinger, Soc de Resp. Ltda., San Martin 235, Guenos Aires **160,000,000** Pesos; Brian Cortinon & Partners (A British Firm) **190,000,000** Pesos. CD 6/29—ENR 7/1.

PUBLIC BUILDINGS

BIDS ASKED

April 14

†Colorado and Kansas — Bureau Reclamation, Dpt. Interior, Region 7, New Customhouse, Denver, Colo., constr. residence, combination garage and testing laboratory, pump house, water supply sys., gas supply sys., sewage disposal sys., driveway, parking area and sidewalks, for Government Field Construction Facilities at Bonny Dam, St. Francis Unit, Republican Div., Spec. VII-55, Region 7, Missouri River Basin Proj. Extended date. L. N. McClellan, ch. engr. CD 3/14—ENR 3/17.

April 18

Calif., Big Bear Lake—Big Bear Lake Elementary School Dist., Big Bear Lake, rein.-con. school. $250,000. H. L. Gogerty, 3123 W. 8 St., Los Angeles, archt.

April 20

Conn., Bridgeport—City Housing Auth., 252 Hallett St., housing Conn-6042, incl. grading, drainage, sump constr., repairs, replacements 220 dwellings. CD 10/17/47-ENR 10/30/47.

●Pa., Chambersburg—Chambersburg Hospital, c/o H. W. Hunt, Chambersburg, brick, steel hospital. $1,500,000. William J. Zalewski, Chambersburg, archt. The Ballinger Co., 121 N. Broad St., Phila., engr. CD 11/29—ENR 12/9.

N. S. Halifax—J. M. Somerville, secy., c/o Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., National Research Council Bldg., Dalhousie University. Approx. $478,000. Plans deposit $15. G. Brault, c/o owner, archt. CD 11/19/47—ENR 12/11/47.

April 25

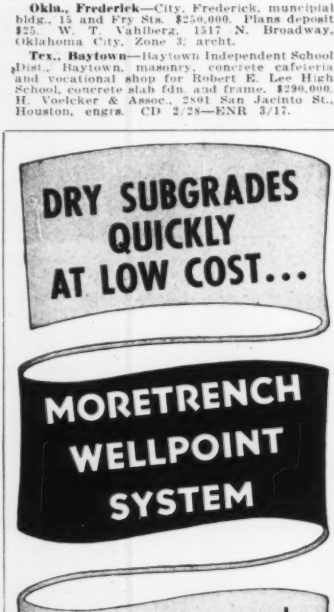
Wyo., Riverton—School Dist. 25, Ralph Forsythe, supt. Schools, school addn. Approx. $250,000. Plans deposit $20. Leo C. Goodrich & Jan Wilking, 226 E. 2nd St., Casper, engrs. and archts. CD 12/27—ENR 1/29.

April 26

†N. M., Las Cruces—U. S. Eng., P. O. Box 1538, Albuquerque, 100 frame, stucco, alt. on masonry single type family quarters. $750,000.

Okla., Frederick—City, Frederick, municipal bldg., 15 and Fry Sts. $250,000. Plans deposit $25. W. T. Vahlberg, 1517 N. Broadway, Oklahoma City, Zone 3, archt.

Tex., Baytown—Baytown Independent School Dist., Baytown, masonry, concrete cafeteria and vocational shop for Robert E. Lee High School, concrete slab fdn. and frame. $290,000. H. Voelcker & Assoc., 2801 San Jacinto St., Houston, engrs. CD 2/28—ENR 3/17.



April 28

†Md., Fort George G. Meade—U. S. Eng., 1 and Douglas Sts. N. W., Wash., D. C., 2 story row house—colonial family quarters, Serial No. Eng. 49-080-49-127 (30)M. CD 3/5—ENR 3/29.

Tex., Huntsville—Walker Co. W. Patton, judge, Courthouse, 40 bed county hospital. $375,000. Plans deposit $25. C. H. Page & Son, 305 W. 11 St., Austin, engrs. CD 4/17/47—ENR 5/1/47.

Wis., Wauwatosa—Milwaukee Co. Institution & Departments, Wauwatosa, 2 story, bsmnt., 140x140 ft., steel, brick, tile block school, swimming pool and gymnasium, concrete fdn., at Home for Children. $800,000. Plans deposit $10. John Messmer, co. archt.

April 29

O., Defiance—City Hospital Bldg. Comn., Defiance, 75 bed hospital. $825,000. Lewis J. Sarre, Battle Creek, Mich., and Philip T. Sherman, Defiance, archts. CD 12/13—ENR 12/16.

May 3

†Va., Fort Myer (sta. Arlington)—U. S. Eng., first and Douglas Sts. N. W., Wash. 25, D. C., altering Bldg. 172, providing refrigerating plant, Serial No. 49-080-49-138 (33) M. CD 10/26—ENR 11/11.

May 4

●Calif., Tulare—Tulare Local Hospital Dist., Box 656 2 story, bsmnt., rein.-con. 73 bed hospital and rein.-con. laundry bldg. $1,000,000-$1,250,000. Plans deposit $75. H. C. Chambers & Lester Hubbard, 124 W. 4 St., Los Angeles, archts. CD 6/24—ENR 7/8.

May 16

Wis., Appleton—Bd. Educ., Appleton, 2 story part bsmnt., L-shaped, 64x348 ft. school. Plans deposit $50. Law, Law, Potter & Nystrom, 121 S. Pinckney St., Madison, archts. CD 1/5—ENR 1/20.

May 17

†S. C., Hot Springs—Veterans Admin., Munitions Bldg., Wash. 25, D. C., boiler and coal handling equip. for Boiler House Bldg. 18, Spec. 4908. CD 1/17—ENR 1/27, under LB.

LOW BIDDERS

Ala., Birmingham—City, Mar. 30, Ramsey High School gymnasium and auditorium addn., from Brice Bldg. Co., 1021 2 Ave. N., **$526,586*****West End High School gymnasium and auditorium addn., from Butler & Cobbs, Bell Bldg., Montgomery, **$459,940*****combined bid on both projects from Daniel Contr. Co., 824 7 Ave. S. **$888,686.** CD 3/1—ENR 3/3.

Calif., Fresno — Fresno Co., Courthouse, Mar. 29, 2 story, 24,000 sq. ft. floor space nurses' home at Fresno County General Hospital, from Midstate Constr. Co., 427 Bryant St., San Francisco, **$443,000.** CD 3/14—ENR 3/17.

●Calif., Mendocino—State Div. Architecture, P. Wks. Bldg., Sacramento, Mar. 29, 3 ward bldgs., combination kitchen, commissary and bakery with combined floor area of 150,000 sq. ft., from Moore & Roberts, 693 Mission St., San Francisco, **$1,594,777.** CD 3/15—ENR 3/10.

Kan., Kansas City—Bd. P. Utilities, Mar. 25, steam generator, ash collecting equip., from Riley Stoker Corp., 99 Neponset St., Worcester, Mass., **$886,400.** CD 3/2—ENR 3/10.

†N. M., Albuquerque—U. S. Eng., P. O. Box 1538, Mar. 29, warehouse, at Sandia Base, Serial No. 291-49-16, from Utah Constr. Co., Ogden, Utah, and C. H. Leavell Co., 1940 Wyoming St., El Paso, Tex., **$93,500.** CD 3/1—ENR 3/3.

O., Towland—Bd. Educ., Howland, Mar. 29, high school from W. R. Gibson, Warren, **$515,000.** CD 3/1—ENR 3/24.

Okla., Lake Murray—Bd. Water Resources, Capitol, Oklahoma City, Zone 5, Mar. 28, 40 room lodge and dining hall, air-conditioning, from Burton-Miller Constr. Co., Ardmore, **$527,654.** CD 3/10—ENR 3/17.

Pa., Clarks Summit—Dpt. Property & Supplies, 18 and Herr Sts., Harrisburg, Mar. 30, General contract boiler house at Clarks Summit State Hospital, from S. G. Mastriani Co., 522 Lincoln Trust Bldg., Dunmore, **$234,856;** mechanical and piping distr. sys., from E. A. Campagna, 818 W. Lackawanna Ave., Scranton, Zone 3, **$208,800.** CD 2/28—ENR 3/10.

Tex., Pasadena — Pasadena Independent School Dist., Pasadena, Mar. 28, 2 story, brick, hollow tile administration bldg., concrete frame and fdn., from Walter M. Rainey, 6731 Harrisburg St., Houston, **$264,000.** CD 1/7—ENR 1/22/48.

Tex., Plains—Plains Rural High School Dist. 1, Plains, Mar. 28, masonry high school, grammar school addn., concrete slab fdn., from FMFI Constr. Co., P. O. Box 1395, Lubbock, **$255,000.** CD 3/14—ENR 3/17.

Wis., Fox Point (P. O. Milwaukee)—Village, 8540 N. Lake Dr., Zone 11, will not construct recreation bldg. **$100,000.** Project abandoned. CD 9 21—ENR 10/14.

CONTRACTS AWARDED

Md., Baltimore—Mayor & City Council, City Hall, dispensary bldg., City Hospital, 1940 Eastern Ave., to Baltimore Contractors, Inc., 711 S. Central Ave., **$544,287.** Bids 3/23, awarded 3/30. CD 3/29—ENR 3/31, under LB.

Md., Sykesville — Bd. Educ., Carroll Co., City Hall, Westminster, 1 story, steel, concrete Sykesville High School alteration, addns., to

John K. Ruff, Inc., 100 W. 22 St., Baltimore. Approx. **$380,000.** Awarded 3/30. CD 3/16—ENR 3/24, under LB.

●**N. Y., Brooklyn**—New York City Housing Auth., 63 Park Row, New York, Zone 17, general contract Glenwood Houses, Proj. No. NYC-12, in area bounded by Farragut Rd., E. 56 St., Avenue H, Glenwood Rd. and Ralph Ave., to George F. Driscoll Co., 41 E. 42 St., New York, Zone 17, **$6,867,686*****plumbing, to Lipsky & Rosenthal, Inc., Lexington Ave. and 115 St., New York, Zone 29, **$924,000*****heating and ventilating, to Heating Maintenance Corp., 220 E. 138 St., New York, Zone 5, **$898,600.** Bids 2/23. CD 2/23—ENR 3/3, under LB.

●**N. Y., Brooklyn**—New York City Housing Auth., 63 Park Row, New York, Zone 7, foundations, appurtenances for Boulevard Houses, Proj. NYC-16, in area bounded by Linden Blvd., Ashford St., Wortman Ave., Hendrix St., Stanley and Schenck Aves., to Horn Constr. Co., 291 Broadway, New York, Zone 7, **$1,083,828.** Bids 3/8. CD 3/10—ENR 3/17, under LB.

●**N. Y., New York**—New York City Housing Auth., 63 Park Row, Zone 7, general contract for Sedgwick Houses Proj. NYC 14, in area bounded by proposed Cross-Bronx Expressway on southeast, W. 174 St. on northeast, Undercliff Ave. on northwest and a line on southwest running along boundary of proposed park, Bronx Boro, to Del Balso Constr. Corp., 99 Columbia Heights, Brooklyn, **$4,293,580;** plumbing to Jesse E. Kahn, 131 W. 21 St., Zone 11, **$719,369.** Bids 3/1. CD 3/3—ENR 3/10, under LB.

●**N. Y., New York**—New York City Housing Auth., 63 Park Row, Zone 7, general contract Parkside Houses, Proj. NYC-17, in area bounded by Bronx Park East, Adee Ave., White Plains Rd. and Arnow Ave., Bronx Boro, to S. S. Silberblatt, 25 W. 45 St., Zone 19, **$5,479,900;** plumbing to Fein-Schlosberg, 1758 Second Ave., Zone 2, **$723,000.** Bids 3/22. CD 3/24—ENR 3/31, under LB.

N. Y., Rockaway—New York City Housing Auth., 63 Park Row, New York, Zone 7, foundations, appurtenances for Arverne Houses, Proj. NYC-18, in area bounded by Rockaway Beach Blvd., Arverne Blvd., Beach 56 St., Beach Channel Dr. and Beach 65 St., to Gull Constr. Co., Inc., 518 Porter Ave., Brooklyn, Zone 22, **$533,111.** Bids 3/3. CD 2/7—ENR 2/10, under LB.

●**N. Y., Troy**—Municipal Housing Auth., City Hall, housing, to John A. Johnson Sons, 248 41 St., Brooklyn, Zone 32, **$1,893,000.** Bids 3/22. CD 3/9—ENR 3/17.

●**Oklahoma**—U. S. Eng., 416 Wright Bldg., Tulsa, transformers for installation in Fort Gibson Power House to Pennsylvania Transformer Co., 808 Ridge Ave., Pittsburg, Zone 12, **$234,850.** CD 2/14—ENR 2/24.

●†**Va., Camp Lee** (br. Petersburg)—U. S. Eng., First and Douglas Sts. N. W., Wash. 25, D. C., 2 barracks for enlisted men, masonry constr., Serial No. 49-080-49-104 (26) M-A to Virginia Eng. Co., Newport News, **$1,559,000.** Bids 3/22. CD 3/24—ENR 3/31, under LB.

Ont., London—Victoria Hospital Trust, 319 Ottaway Ave., 3 story, bamnt., 45x87 ft., reinforc., brick wing to War Memorial Childrens Hospital, to Putherbough Constr. Co. Ltd., 320 Colborne St. Approx. **$485,000.** CD 1/31—ENR 2/3.

Que., St. Hyacinthe—Province of Quebec, Quebec City, 3 story, 40x84 ft., concrete, steel, brick dairy products school, to W. Legare, Inc., 395 Chemin St. Foye, Quebec City, **$381,000.** S. A. Cyr, 4395 St. Andrew St., Montreal, archt. Lalonde & Valois, Canada Cement Bldg., Montreal, engrs.

COMMERCIAL BUILDINGS

BIDS ASKED

April 13

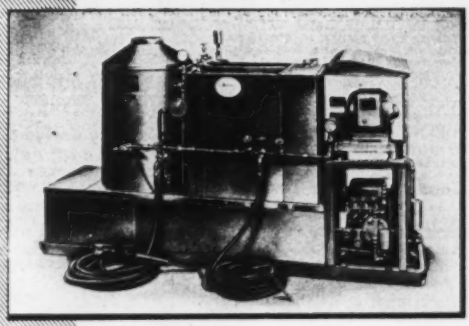
Minn., Minneapolis—First Unitarian Society, Rev. C. Strom, 1326 Harmon Pl., 1 story, bamnt., brick, stone church, 900 Mount Curve Ave. $300,000. Long & Thorshov, 400 Metropolitan Life Bldg., archts. CD 6/14/45—ENR 6/28/45.

Proposal Advertisements see pp. 86 to 89

FOR **HEAVY DUTY** CLEANING –
USE **HEAVY DUTY EQUIPMENT**

don't send a boy

TO DO A MAN'S JOB



MALSBARY HIGH PRESSURE COMBINATION CLEANERS CUT CLEANING COSTS BY 60%

Tough cleaning jobs, such as tractors, scrapers, trucks, buildings, require large volumes of hot solution or water at high operating pressures.

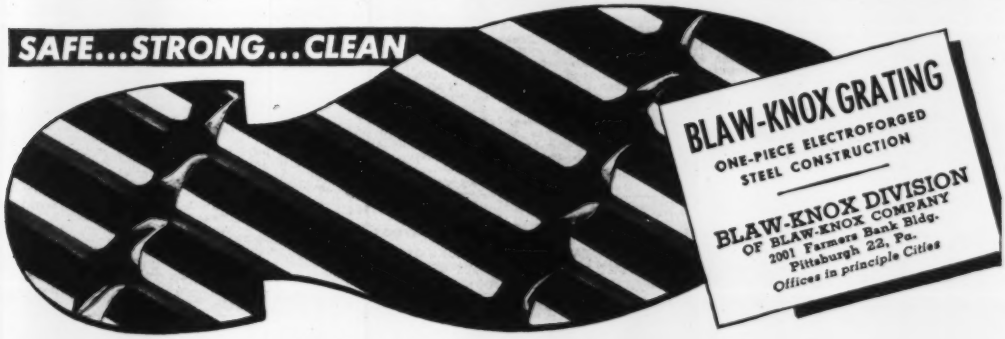
The Malsbary High Pressure Combination Cleaner produces up to **35 gpm** at operating pressures up to **400 pounds,** and performs tough cleaning jobs in **one-third** the time of ordinary steam cleaners.

Cleaning costs are largely labor costs. The Malsbary "300" or "500" Cleaner cuts cleaning costs by reducing cleaning man hours.

Write for Catalog 85. *Dept. 238B*

SINCE 1921

MALSBARY MANUFACTURING CO.
845 92nd AVENUE · OAKLAND 3, CALIFORNIA



U. S. Government

Public Roads Administration, Federal Works Agency, March 25, 1949. SEALED BIDS will be received at the office of the Division Engineer, Public Roads Administration, 1440 Columbia Pike, Arlington, Virginia, until 1000 a.m., E.S.T., APRIL 21, 1949, for Project 6A17, George Washington Memorial Parkway, Arlington County, Virginia. Length 2 miles. The approximate quantities of the more important items are as follows: 30,000 cu. yd. borrow, 4,500 sq. yd. plain cement concrete base course, 48,000 sq. yd. reinforced cement concrete pavement, 33,825 lin. ft. concrete curb and 32,000 cu. yd. topsoil. Minimum wage rates have been fixed as required by law. For plans and specifications, a deposit of $10 cash or certified check made payable to the Treasurer of the United States will be required to insure their return within 15 days after opening of bids. Plans, specifications and proposal forms may be obtained at address given above. H. J. Spelman, Division Engineer.

(959)

OFFICIAL PROPOSALS

Bids: April 14, 1949 (968)

Air Conditioning for Terrace Restaurant

THE PORT OF NEW YORK AUTHORITY
LA GUARDIA AIRPORT
CONTRACT LGA-21

Sealed proposals for the furnishing and installation of an air conditioning system for the Terrace Restaurant in the Domestic Terminal at La Guardia Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 11:30 o'clock on the morning of Thursday, April 14, 1949, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Chief Engineer, The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York City and copies will be furnished upon deposit of $10.00 per set. The deposit will be remitted if the documents are returned in good condition, not later than thirty days after the opening of proposals.

THE PORT OF NEW YORK
AUTHORITY
Howard S. Cullman,
Chairman.

New York, April 7, 1949.

Bids: April 25, 1949 (970)

Office Alterations on Fifteenth Floor

THE PORT OF NEW YORK AUTHORITY
PORT AUTHORITY BUILDING
CONTRACT EXD-13

Sealed proposals for office alterations on the fifteenth floor of the Port Authority Building will be received in the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:00 o'clock on the afternoon of Monday, April 25, 1949, and thereafter in the auditorium of the Authority at the same address until 2:30 P.M., on the same date at which latter time and place said proposals will be publicly opened and read.

Contract documents may be seen at the office of the Chief Engineer and copies will be furnished upon deposit of $25.00 per set. The deposit will be remitted if the documents are returned in good condition, not later than thirty days after the opening of proposals.

THE PORT OF NEW YORK
AUTHORITY
Howard S. Cullman,
Chairman.

New York, April 7, 1949.

Bids: May 2, 1949 (969)

Fans, Motors and Transmissions

THE PORT OF NEW YORK AUTHORITY
GEORGE WASHINGTON BRIDGE
WEST 179TH STREET TUNNEL
CONTRACT GWB-8

Sealed proposals for the fans, motors and transmissions for the West 179th Street Tunnel which will form part of the New York Approach to the George Washington Bridge will be received in the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:00 o'clock on the afternoon of Monday, May 2, 1949 and thereafter in the Auditorium of the Authority at the same address until 2:30 P.M., on the same date, at which latter time and place said proposals will be publicly opened and read.

Contract documents may be seen at the office of the Chief Engineer and copies will be furnished upon deposit of $25.00 per set. The deposit will be remitted if the documents are returned in good condition, not later than thirty days after the opening of proposals.

THE PORT OF NEW YORK
AUTHORITY
Howard S. Cullman,
Chairman.

New York, April 7, 1949.

Bids: April 21, 1949 (964)

Widening Bridge & Approaches

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

RT. 44, WIDENING BRIDGE & APPROACHES AT LITTLE MANTUA CREEK

For the widening of Route 44, Bridge and Approaches at Little Mantua Creek, West Deptford Township, Gloucester County. Length .075 miles.
Estimated:

Roadway Items

680 cu. yds. Borrow Excavation
870 sq. yds. 8" Gravel Shoulders
123 tons Pavement, Type A or T

Bridge Items

82 cu. yds. Concrete in Structures
4340 lbs. Reinforcement Steel in Structures
1260 lin. ft. Timber Piles

Bids for the above will be received at the office of the State Highway Department, Room 102, State House Annex, Trenton, New Jersey, on Thursday, April 21, 1949, at eleven o'clock (11:A.M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars (10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 102, State House Annex, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed Spencer Miller, Jr.
State Highway Commissioner

Bids April 21, 1949 (966)

Planting Center Island Areas

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

RT. 25, SEC. 32D, PLANTING CENTER ISLAND AREAS

For the planting of Center Island Areas on Route 25, Section 32D, at Carnegie Avenue, City of Newark, Essex County. Length 0.161 miles.
Estimated:

94 units Japanese Holly
31 cu. yds. Topsoil for Planting
3 tons Humus

Bids for the above will be received at the office of the State Highway Department, Room 102, State House Annex, Trenton, New Jersey, on Thursday, April 21, 1949 at eleven o'clock (11:00 A.M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars (10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 102, State House Annex, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed Spencer Miller, Jr.
State Highway Commissioner

Bids: May 6, 1949 (971)

Overpeck Valley Joint Sewage Works

Sealed bids will be received by the Bergen County Hackensack River Sanitary Sewer District Authority at the Bergen County Administration Building, Hackensack, N. J. until 8:00 P.M., Friday, May 6, 1949, for contract 1 and contracts 6 through 18, and at said place and time will be publicly opened and read aloud.

Drawings and specifications may be examined at the offices of the authority, Bergen County Administration Building, or at the offices of Bogert-Childs Engineering Associates, 624 Madison Avenue, New York 22, N. Y.

Copies of the Contract documents may be obtained at these offices upon payment as follows:

Cont. 1. Drawings $50.
Cont. 1. Specifications $10.
Conts. 6-18. Drawings $10 per contract.
Conts. 6-18. Specifications $10.

New applicants will be denied copies after 5:00 P.M., May 3, 1949.

Upon return of contract documents within 2 weeks after receipt of bids, a bidder will be refunded his deposit and a non-bidder, 50 percent.

Each bidder must deposit with his bid, security in an amount of not less than five per centum (5 percent) of the base bid as provided in the information for bidders.

No bidder may withdraw his bid within 60 days after May 7.

By order of The Bergen County Hackensack River Sanitary Sewer District Authority

Arthur W. Kneerim
Treasurer and Acting Secretary.

March 17, 1949.

(Continued on page 87)

OFFICIAL PROPOSALS
(Continued from page 86)

Bids: April 26, 1949 (961)

Peninsula Tunnel Unit Intercepting Sewer and Sewage Treatment Project

CITY OF PORTLAND, OREGON
NOTICE TO CONTRACTORS

Sealed proposals for furnishing all materials and constructing the Peninsula Tunnel Unit of the Intercepting Sewer and Sewage Treatment Project will be received at the office of the Purchasing Agent, Room 208, City Hall, Portland, Oregon, until 2 P.M. on April 26, 1949, and thereafter will be publicly opened and read.

This Contract Unit consists primarily of approximately 3 miles of 8-foot, horseshoe section, concrete-lined tunnel, with necessary shafts and appurtenant structures. Bids may be submitted on alternate types of timbering and supports. This is a unit price contract and quantities may be varied. The following amounts for certain major items which are common for all types of tunnel supports give a general idea of the character and size of the work:

Excavation for 8-ft. tunnel, 16,410 lin. ft.
Concrete lining for 8-ft. tunnel, 16,410 lin. ft.
Shafts, 342 vert. ft.
Reinforcing Steel, 500,000 pounds.
Pipe Sewers and Drains, 7,500 lin. ft.

Plans, Specifications and other documents required for bidding may be inspected at the Office of the Purchasing Agent and copies may be obtained by qualified prospective bidders upon a deposit of $25.00 which amount will be refunded in case a regular and bonafide bid is made and the documents returned, but otherwise will be retained.

Attention of bidders is directed to Section 98-103, Oregon Code, providing for prequalification.

All Proposals must be upon the regular blank forms furnished with the Specifications, and must be accompanied by a certified check for an amount equal to or exceeding five percent (5%) of the total bid. A 100% corporate surety bond will be required to guarantee the faithful performance of the contract, together with insurance in such sum as may be necessary to protect the City against loss or damage by reason of injuries to person or property.

Bonds to finance this improvement have been sold, and monthly progress payments will be made.

The right is reserved by the City to reject any or all bids, or to accept the proposal which appears most advantageous.

By order of the City Council, March 23, 1949.

GENTRY W. YATES
Purchasing Agent

Bids April 21, 1949 (965)

Bridge Approaches

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

RT. S-49, SEC. 5-A, GRASSY SOUND BRIDGE APPROACHES

For the construction of Route S-49, Section 5A, Grassy Sound Bridge Approaches, Bulkhead and Completion of Embankments, in Lower Township and City of Wildwood, Cape May County. Length 0.561 miles.
Estimated:

Roadway Items
34,200 cu. yds. Roadway Excavation-Earth
5,600 cu. yds. Borrow Excavation

Bulkhead Items
5,975 lin. ft. Treated Timber Piles
12 M.B.M. Timber
9,058 sq. ft. Timber Bulkhead Sheathing
6,900 lbs. Tie Rods

Bids for the above will be received at the office of the State Highway Department, Room 102, State House Annex, Trenton, New Jersey, on Thursday, April 21, 1949, at eleven o'clock (11:00 A.M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

OFFICIAL PROPOSALS

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 102, State House Annex, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: Spencer Miller, Jr.
State Highway Commissioner

Bids April 21, 1949 (967)

Sparta Drainage

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

ROUTE 6A, SPARTA DRAINAGE

For Route 6A, Sparta Drainage, from Wallkill River to Stanhope Road, Sparta Township, Sussex County. Length 0.297 miles.
Estimated:
320 sq. yds. 8" Rein. Conc. Pavement Surface
462 lin. ft. 12" & 18" Rein. Conc. Pipe
960 lin. ft. 21" & 24" Rein. Conc. Pipe
255 lin. ft. 30" Rein. Conc. Pipe

Bids for the above will be received at the office of the State Highway Department, Room 102, State House Annex, Trenton, New Jersey, on Thursday, April 21, 1949, at eleven o'clock (11:00 A.M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 102, State House Annex, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed Spencer Miller, Jr.
State Highway Commissioner

Bids: April 21, 1949 (963)

Drainage Improvement

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

RT. 44, SECTION 10, DRAINAGE IMPROVEMENT

For the drainage improvement on Route 43, Section 10A, at Watsons Pond, in the Borough of Clementon, Camden County. Length 0.195 miles.
Estimated:
730 sq. yds. 8" Gravel Base Course
37 tons Pavement, Type A or T
200 sq. yds. 2" Rein. Conc. Pavement Surface
224 lin. ft. 15" & 18" Rein. Conc. Pipe
1,018 lin. ft. 24" Rein. Conc. Pipe
128 cu. yds. Conc. Culverts & Headwalls

Bids for the above will be received at the office of the State Highway Department, Room 102, State House Annex, Trenton, New Jersey, on Thursday, April 21, 1949, at eleven o'clock (11:00 A.M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of eTn Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 102, State House Annex, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.000 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: Spencer Miller, Jr.
State Highway Commissioner

U. S. Government

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2619) will be received by Bureau of Reclamation, Denver, Colorado, May 3, 1949, and then publicly opened for furnishing a three-winding power transformer; power circuit breakers; air switches; and instrument transformers for the 34.5/115-kv Roza switchyard, Roza Division, Yakima Project, Washington. Delivery is desired within 380 to 650 days. For particulars, address Bureau of Reclamation, Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner. (955)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2629) will be received by Bureau of Reclamation, Denver, Colorado, May 3, 1949, and then publicly opened for furnishing one lot of pipe, fittings, and valves; one lot each of the following: pipe hangers, twin strainers, "Y" type strainers, pressure reducing valves, lubricated plug valves, and sprinkler heads for Kortes Power Plant, Kortes Unit, Wyoming, Missouri River Basin Project. Delivery is desired within 300 days. For particulars, address Bureau of Reclamation, Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner. (962)

(Continued on page 88)

OFFICIAL PROPOSALS
(Continued from page 87)

Bids: April 27, 1949 (888)

Correction of ad appearing in 2/24/49.

Laying Cast Iron Pipe Distribution Mains and Appurtenant Work

CLARKSBURG WATER BOARD
CLARKSBURG, WEST VIRGINIA

Sealed proposals will be received for the item listed below by the Clarksburg Water Board at their office in Clarksburg, West Virginia until 10:00 A.M. on the 27th day of April, 1949, up to the hour of opening bids, at which time and place all bids will be publicly opened and read aloud. Bids will be received on the contract covering:

Laying Cast Iron Pipe Distribution Mains

Approximate quantities:
14,000 lin. ft. of 12" pipe
6,000 lin. ft. of 8" pipe
600 cu. yds. of rock excavation

The successful bidder will be required to furnish a satisfactory performance bond in the amount of 100% of his contract. The contract documents, including specifications and drawings are on file at the office of the Clarksburg Water Board, Clarksburg, West Virginia and at the office of Alvord, Burdick & Howson, 1401 Civic Opera Bldg., Chicago, Illinois.

The right is reserved by the Water Board to reject any or all bids or to accept any considered advantage to the Water Board.

Certified check, cash, government bonds, bidder's bond, or bank draft payable to the Clarksburg Water Board, or a satisfactory bid bond executed by the bidder and a surety company in an amount equal to 10% of the bid, shall accompany the proposal.

No bid may be withdrawn after the scheduled closing time for the receipt of bids but bids may be withdrawn at any time prior to the scheduled time for opening bids.

SCOTLAND G. HIGHLAND
Secretary and General Manager
Clarksburg Water Board,
Clarksburg, West Virginia.

..... 1949.

Bids: April 20, 1949 (937)

Intercepter

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF FINANCE
DIVISION OF PURCHASES
NOTICE TO SEWER CONTRACTORS

Sealed Proposals for the following project will be received at the office of the State Purchasing Agent, Room 123, State House, Smith Street, Providence, until 10 o'clock a.m. on the 20th day of April, 1949, and publicly opened and read.

BLACKSTONE VALLEY INTERCEPTER, SECTION A
BUCKLIN BROOK BRANCH INTERCEPTER IN
PAWTUCKET AND EAST PROVIDENCE, RHODE ISLAND

Project involves 5,700 ft. of 90-in. sewer, 675 ft. of 24-in. sewer, and appurtenant work.

Drawings and contract documents may be examined at the office of the State Purchasing Agent, Room 123, State House, Providence, or the office of the Blackstone Valley Sewer District Commission, Room 338, State Office Building, Providence, or the office of Metcalf & Eddy, Engineers, 1300 Statler Building, Boston, Massachusetts, every week day except Saturdays and holidays between the hours of 8:30 a.m. and 4:30 p.m.

Copies of the specifications may be obtained upon depositing $25.00 at the office of the State Purchasing Agent, Room 123, State House, Smith Street, Providence. This deposit will be refunded to unsuccessful bidders upon returning specification in good condition, after an award has been made.

Each bidder must deposit with his bid a Bid Surety of $25,000.00 in the form of a certified check, bid bond or cash. The successful bidder must furnish a 100% performance bond.

Prevailing wage rates and labor laws for public work, as set forth in the "Information for Bidders" are applicable.

The State of Rhode Island reserves the right to waive any informalities in, or to reject any or all bids.

DEPARTMENT OF FINANCE
DIVISION OF PURCHASES
BY: Franklyn A. Adams
State Purchasing Agent

OFFICIAL PROPOSALS

Bids: April 20, 1949 (960)

State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Chapter 63 Laws of 1936, as amended, and special provisions for projects financed with federal aid funds, sealed proposals will be received until ten-thirty o'clock A. M., eastern standard time on *Wednesday, April 20, 1949* by Henry A. Cohen, Director, Bureau of Contracts & Accounts, *14th* Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects: Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts & Accounts, Albany, N. Y., and at the office of the District Engineers noted below, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for plans and proposal forms for each contract containing 1 to 15 sheets is $5.00; 16 to 30 sheets, $10.00; over 30 sheets, $20.00. A refund will be made in full to bidders for the return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
		DISTRICT No. 1				
		G. L. NICKERSON, Dist. Engr., 333 Broadway, Albany, N. Y.				
Essex	RC 49-36	Saranac Lake-Bloomingdale, S. H. 821 Saranac Lake Vill.-Bloomingdale Vill., S. H. 929	6.94	Asph. Conc. Opt.	$10,000 Plans $5.00	$172,000
Washington	RC 49-37	Afton-Hartford, S. H. 8101	5.68	Road Mix	$7,500 Plans $5.00	$147,000
Warren	FASS 49-4	Sodom-No. Creek, Co. Rd. 29, Proj. S223(1)	3.90	I-Beam 41' 81" Conc. Slab 27' Bit. Tr. Gravel	$16,000 Plans $10.00	$275,000
		DISTRICT No. 2				
		L. KETCHUM, Dist. Engr., 109 No. Genesee St., Utica, N. Y.				
Herkimer	RC 49-38	Old Forge-Eagle Bay, Pts. 1 & 2, S. H. 8180	4.76	Asph. Conc. Opt.	$7,000 Plans $5.00	$134,000
		DISTRICT No. 3				
		WM. ROBINSON, Dist. Engr., 301 E. Water St., Syracuse, N. Y.				
Onondaga	OT 49-3	Ont. Thru. Sep. of Gr. on Hopkins Rd., Vine St., N. Y. C. R. R., Buckley Rd.	0.62	IBS 2 66' 50'; Alpha 2 66' 66'; 2 66' 47'; Conc. Rig. Fr's 56', 43.5' Grd. & Struct.	$65,000 Plans $20.00	$1,117,000
		DISTRICT No. 4				
		A. R. MULLIGAN, Dist. Engr., Barge Canal Terminal, Rochester, N. Y.				
Genesee	RC 49-39	Bloomingdale Road, (Indian Reservation)	0.02	(Alpha $65.80 Superstructure Composite Beam 94' 6"	$2,600 Plans $5.00	$46,000
		DISTRICT No. 5				
		C. R. WATERS, Dist Engr., 65 Court St., Buffalo, N. Y.				
Chautauqua	RC 49-40	North Clymer-Sherman, S. H. 8468	6.17	Bit. Mac. Pen. Ty. I—5.78 mi. Asph. Conc. Opt.—0.08 mi. St. or Slag, D. S. T.—0.31 mi.	$11,000 Plans $5.00	$188,000
Erie	RC 49-22	Main Street, Pts. 3 & 4 S. H. 130 and S. H. 131	2.55	Asphalt Conc. Opt.	$6,000 Plans $5.00	$102,000
Niagara	PSC 7283	City of Lockport Lock St. & Gooding St. with N. Y. C. R. R.	0.26	I-Beam 48½" Conc. 8" Thk. 44' Wdt.	$30,000 Plans $10.00	$547,000
		DISTRICT No. 6				
		H. F. BRUMM, Dist. Engr., 30 West Main St., Hornell, N. Y.				
Steuben	RC 49-41	Cohocton-Naples, Pt. 1, S. H. 5611	3.36	Asph. Conc. Opt.	$12,000 Plans $5.00	$202,000
Chemung	RC 49-42	Horseheads-Corning State Hwy. 358 Horseheads-Montour Falls State Hwy. 5218 Horseheads-Cayuta State Hwy. 5432	3.82	Asphalt Conc. Opt.	$9,000 Plans $5.00	$157,000
Tioga	PSC 7688 & 8145	Elim. of Village Streets & Owego-Candor, Pt. 1, S. H. 5420 with Erie R. R.	0.22	Plate Girder 49' Reinf. Conc.	$45,000 Plans $10.00	$800,000
		DISTRICT No. 7				
		R. F. HALL, Dist. Engr., 444 Van Duzee St., Watertown, N. Y.				
Lewis	RC 49-17	Copenhagen, S. H. 937	3.51	Asph. Conc. Opt.	$5,000 Plans $5.00	$98,000
St. Lawrence	RC 49-18	Cranberry Lake-Sevey's cors., S. H. 8220	8.52	Asph. Conc. Opt.	$16,000 Plans $5.00	$276,000
		DISTRICT No. 8				
		J. S. BIXBY, Dist. Engr., Pleasant Valley Rd., Poughkeepsie, N. Y.				
Orange	RC 49-43	Oxford-Chester, S. H. 5297	2.81	Asph. Conc. Opt.	$8,000 Plans $5.00	$143,000
Rockland	RC 49-44	N. J. State Line-Congers, Pt. 1, S. H. 8448; Congers-Long Clove, S. H. 5002; Rockland Lake-Long Clove, S. H. 8196	3.83	Asph. Conc. Opt.	$6,000 Plans $5.00	$114,000
Columbia	RC 49-45	Ivanson-Brick Tavern, Glent, S. H. 9087	6.31	Asph. Conc. Opt.	$16,000 Plans $5.00	$282,000
Westchester	CC49-1	Cross Co. Parkway to Hutchinson River Parkway (Wartburg Conn.)	0.58	Rigid Frame 87' 6" Span, Ellip. Arch 50' 7.4" Span, Conc. Arch 5.5' 10" Span, Conc. 8" Thk., 24' 12' Var. Thk.	$85,000 Plans $20.00	$1,429,000
Dutchess	FARC 49-1	South S. H. 223 Project No. 1 49 F394(10)		Asph. Conc. Opt.	$25,000 Plans $5.00	$465,000
		DISTRICT No. 9				
		F. W. DONOVAN, Dist. Engr., 71 Frederick St., Binghamton, N. Y.				
Delaware	RC 49-20	East Branch-Sullivan Co. Line, Pt. 1, S. H. 5383	4.85	Asph. Conc. Opt.	$9,000 Plans $5.00	$155,000

(Continued on page 89)

OFFICIAL PROPOSALS

(Continued from page 88)

DISTRICT No. 10

J. J. DARCY, Dist. Engr., Montauk Hwy. at Little E. Neck Rd., Babylon, L. I., N. Y.

New York	FACBE 49-3	Cross Bronx Expy. (Cont.2X) Highbridge Park Connection Project No. U1084 (12)	0.22	Rigid Frame 87' 8" Conc. 9" Thk. 2 at 36', Var. Wdt.	$66,000 Plans $20.00	$1,200,000
New York & Bronx	FACBE 49-4	Cross Bronx Expy. (Cont. 3) Washington Br. Alterations Project No. U1084 (13)	0.36	Alterations to Br. Conc. 3" Thk. 2 at 33' Wdt.	$43,000 Plans $5.00	$850,000
Nassau	SSP 49-1	Southern State Parkway	4.36	Traffic Driver Misc.— 1.82 mi. Asph. Conc. Opt.—2.54 mi.	$70,000 Plans $20.00	$1,000,000
Suffolk	NSP 49-1	Northern State Parkway	4.46	Conc. 8" Thk., 2 at 25'	$60,000 Plans $20.00	$1,000,000

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by cash, draft or certified check payable to the order of "State of New York, Commissioner of Taxation & Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders".

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
Supt. of Public Works

(Continued from page 88)

Bids: April 19, 1949 (944)

Bridge

BOARD OF KNOX COUNTY COMMISSIONERS

COURT HOUSE
KNOXVILLE, TENNESSEE

NOTICE IS HEREBY GIVEN that sealed proposals will be received by the Board of Knox County Commissioners at the Court House, Knoxville 42, Tennessee until 10:00 A.M., E.S.T. Tuesday, April 19, 1949 for the construction of the following project. Proposals will be OPENED and read publicly by the Commission at the above address immediately after the hour set for receiving bids.

This contract comprising: furnishing materials and constructing substructure, roadway and sidewalk slabs, and the two reinforced concrete approach spans of 333 foot total length; and erecting structural steel truss continuous over two supports and composed of a 200 foot main span and two 160 foot anchor spans, all for Boyd Bridge over the Holston River on Strawberry Plains Pike just outside Knoxville, Tennessee at Holston River mile 1.9.

Full information, proposal forms, special provisions and plans are available at the office of Patchen and Zimmerman, Engineers, Daniel Field Airport, Augusta, Georgia. A deposit of $25.00 is required for each proposal and set of plans issued. It is requested that the proposal and plans be returned and the original deposit will at that time be promptly refunded. Requests for proposal and plans must be accompanied by cash, cashier's check, certified check, post office or express money order made payable to the Board of Knox County Commissioners, Knoxville, Tennessee, and shall be addressed to Patchen & Zimmerman, Engineers with explicit instructions for mailing or delivery direct to the Contractor. A deposit of $1.50 with no refund is required for each copy of the General Specifications which are *Standard Specifications for Road and Bridge Construction Adopted by the State of Tennessee Department of Highways and Public Works on January 1, 1948.* Requests for the General Specifications shall be sent to the Tennessee Department of Highways and Public Works, War Memorial Building, Nashville, Tennessee, Attention: Mr. L. M. Means, with a statement that they are for use on this project.

Board of Knox County Commissioners
W. W. Luttrell, Chairman
T. P. Lawson, Secretary

Bids: April 29, 1949 (946)

Sewerage System and Treatment Plant

The Municipal Authority of the Borough of Mechanicsburg, Penna.

Sealed proposals will be received at the Municipal Building, Mechanicsburg, Penna., until 2:00 P.M., E.S.T. April 29, 1949 for furnishing all necessary labor, materials and equipment, and performing all work for the construction of a Sewerage System and a Sewage Treatment Plant and appurtenances, and will there be publicly opened and read at that time. Separate proposals will be received upon two parts of the project as follows:

Sewerage System—including 83,000 lin. ft., 8" to 18" vitrified sewers; 20,700 lin. ft., 6" vitrified sewer house connections; 340 manholes and other appurtenances.

Sewage Treatment Plant—including Control Building, Primary and Secondary Clarifiers, Primary and Secondary Biofilters, Recirculation Pumping Station, Chlorine Contract Tank, Sludge Digester, Sludge Drying Beds, Roads, Fencing and Specified Equipment and Appurtenances.

Proposals shall be accompanied by certified checks in accordance with the provisions contained in the Specifications and in the following amounts:

Sewerage System—$20,000
Sewage Treatment Plant—$10,000

Copies of the Contract Documents, Plans and Specifications may be obtained from Gannett Fleming Corddry and Carpenter, Inc., Consulting Engineers, 600 North Second Street, Harrisburg, Penna., upon deposit of the following amounts for each set:

Sewerage System — Twenty Dollars ($20.00)

Sewage Treatment Plant—Fifteen Dollars ($15.00)

Full refund will be made to actual bidders for return of one set in good condition within ten days after closing date for receipt of bids; refund for return of all other sets, in good condition within the same period, will be fifty per cent of the deposit.

Gannett Fleming Corddry & Carpenter, Inc., Engrs.
600 North Second Street
Harrisburg, Penna.

The Municipal Authority of the Borough of Mechanicsburg, Penna.

"SEARCHLIGHT" Opportunity Advertising

—to help you get what you want.

—to help you sell what you no longer need.

Take advantage of it—For Every Business Want

"Think SEARCHLIGHT First"

U. S. Government

BIDS FOR BANK GRADER UNITS—Memphis District, Corps of Engineers, P.O. Box 97, Memphis 1, Tenn. Sealed bids will be received here until 11:00 a.m., C.S.T. 26 April 1949, and then publicly opened, for furnishing two mechanical bank grader units each consisting of: a 185' boom diesel electric dragline grader machine; a steel grader barge 130' x 70' x 8'-6"; and a steel mooring barge consisting of 2 sections each 200' x 45' x 9', bolted and welded into one 400' unit. Deposit on plans: $10.00 for dragline grader machine, $15.00 for grader barge, and $15.00 for mooring barge. Information on request.

(958)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2621) will be received by Bureau of Reclamation, Denver, Colorado, April 26, 1949, and then publicly opened for furnishing one welded-plate-steel penstock and outlet pipe assembly, comprising one 15-foot diameter headder, two 10-foot 6-inch diameter penstocks, one 57-inch diameter outlet pipe, and one 66-inch diameter outlet pipe, including bends, branch, expansion joints stiffener rings, outlet nozzles, and appurtenances for Boysen Power Plant, Missouri River Basin Project, Wyoming. Delivery is desired within 360 days. For particulars, address Bureau of Reclamation, Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner.

(957)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2618) will be received by Bureau of Reclamation, Casper, Wyoming, May 3, 1949, and then publicly opened for furnishing labor and all materials and performing all work for the construction of Ft. Randall-O'Neill 115-kilovolt transmission line, Missouri River Basin Project. The work is situated between Ft. Randall, South Dakota, and O'Neill, Nebraska, and consists of approximately 45 miles of three-phase, single-circuit, wood-pole, H-frame-type transmission line with two overhead ground wires. Time allowed for completion will be 550 days. For particulars, address the Bureau of Reclamation, Casper, Wyoming; or Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner.

(956)

EMPLOYMENT

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (18)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

CIVIL SERVICE

MUNICIPAL ENGINEER. Registered professional engineer with at least four years of professional experience, preferably in design and construction of sewers. Starting salary: $4200-$5000 a year, depending on experience. Permanent position. Apply to Personnel Supervisor, City of Dayton, Ohio, stating age, education and experience.

PLANNING ENGINEER and Maintenance Engineer. City of Alexandria, Virginia will receive written applications for the positions of (1) Planning Engineer, and (2) Maintenance Engineer. Applicants should have Engineering Degree and five years experience and should submit resume of experience and education in detail, together with salary desired and date available. Personal interview is desirable. Applications should be addressed to the City Manager, City Hall, Alexandria, Virginia.

WANTED: MAN to supervise construction program for Texas prison system two to three years. Must be able to take full charge of office and field. Apply to O. B. Ellis, Huntsville, Texas giving full particulars.

WANTED: ENGINEER-Estimator able to take off quantities for purchasing. Apply O. B. Ellis, General Manager Texas Prison System, Huntsville, Texas.

POSITIONS VACANT

WANTED—ENGINEERS. Architects. Draftsmen experienced in the design of sewers, sewage treatment plants, water treatment plants and industrial buildings. Also engineers to supervise construction. State qualifications, experience, salary requirements and date available. P-1155, Engineering News-Record.

(Continued on page 90)

SEARCHLIGHT SECTION

WANTED ENGINEERS

Senior Associate Grades.....$6191 to $6908 per year
Associate Grades.....$5341 to $6058 per year
Senior Assistant Grades.....$4570 to $5048 per year

In Architectural, Civil, Sanitary, Electrical, Mechanical and Structural Specialties.

To prepare plans, specifications and drawings and to supervise construction on a $38,000,000.00 water system expansion program and other municipal projects.

Placement to be made from lists of applicants qualifying in examinations to be held April 22, 1949.

Apply immediately stating background and experience, also grade and specialty in which you are interested, to

DETROIT CIVIL SERVICE COMMISSION
15th Floor, Water Board Building Detroit 26, Michigan

WANTED

CONSTRUCTION SUPERINTENDENT

WITH REFINERY AND HEAVY CONSTRUCTION EXPERIENCE. LOCATION SOUTH NEW JERSEY AND EASTERN PENNSYLVANIA. STATE AGE, EXPERIENCE AND FULL PARTICULARS.

P-8582, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

ENGINEERS WANTED

Architectural, Civil and Other Specialties are urgently needed by the City of Detroit to prepare plans, specifications and drawings and to supervise and inspect construction on a wide variety of municipal projects. Salary ranges from $3139 to $3590 and $3908 to $4385 a year for a 40 hour week. For information address the

DETROIT CIVIL SERVICE COMMISSION
15th Floor, Water Board Building
Detroit 26, Michigan

WANTED—Mechanical and Structural Engineers For designing and detailing work on concrete reinforcement, structural steel and hangar door construction. Requirements are three to four years practical experience or recent graduation from technical school. Desirable working conditions and opportunities for advancement. These openings are with a nationally known steel fabricating company, located in eastern Ohio. Applicants will please submit a record of their qualifications.

P-7737, Eng. N-R, 520 N. Mich. Ave., Chicago

ESTIMATOR

Wanted by expanding concern doing underground power, telephone conduit, water and gas main construction in Boston, Mass. Experienced man preferred. Permanent position. Excellent opportunity for right party. State qualifications, exp., age, former employers references and salary req.

P-8489, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

WANTED

FOR EXTENSIVE HIGHWAY PROGRAM EXPERIENCE STRUCTURAL DESIGNERS DETAILERS, DRAFTSMEN AND EXPERIENCED HIGHWAY DESIGNERS AND DRAFTSMEN. ALSO RECENT CIVIL ENGINEERING GRADUATES FOR ABOVE. LONG ESTABLISHED FIRM—LOCATION PENNSYLVANIA.

P-8394, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

MAN WANTED

SALES ENGINEER

For selling and promoting asphalt construction and materials. Permanent position and excellent opportunity for right man. State qualifications and references.

SW-8369, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

SALESMAN

With civil or mechanical engineering background. Italian speaking desirable, to follow contracting trade for sale and rental of Construction Machinery in Metropolitan N. Y. area; car furnished, drawing and commission. Write full details.

SW-8572, Engineering News Record
330 W. 42nd St., New York 18, N. Y.

POSITIONS VACANT

TEACHERS WANTED:—Instructor and Assistant Professor of Civil Engineering, for September, 1949. General Civil Engineering subject including hydraulics and sanitary engineering. Pennsylvania college. P-8526, Engineering News-Record.

STRUCTURAL STEEL Designer and Estimator wanted by leading central west fabricator. Permanent position and good opportunity with large well established and growing company. Please state qualifications, past experience and salary requirements. P-8386, Engineering News-Record.

ESTIMATOR AND Sales—Norfolk, Virginia. Salary base with at least 15 years experience in take off pricing and selling in structural and ornamental iron shop. Also one thoroughly experienced structural draftsman. Permanent position. P 8563, Engineering News-Record.

CONTRACTOR'S ASSISTANT—Young, growing firm of general contractors wants an aggressive engineer to handle purchasing and engineering work on commercial and public buildings. Graduate preferred. Permanent position. No traveling. Midwestern location. Salary open. P 8556, Engineering News-Record.

GENERAL CARPENTER Foreman wanted by Contractor operating extensively in the Middle West. Must be good form man, capable of designing form systems and laying out his own work on heavy construction jobs and buildings ranging from $500,000 to $2,000,000 in size. P 8558, Engineering News-Record.

CIVIL ENGINEERING Teacher. Duties: Teaching, laboratory layout and equipment selection. Construction experience desired. At least one year of graduate study required. Rank and salary open. Engineering Dept., San Jose State College, San Jose, California.

MEN WANTED: Party chiefs and instrumentmen for transmission line traverse and profile surveys. Stanley Engineering Co., Hershey Building, Muscatine, Iowa.

SUPERINTENDENT FAMILIAR with long span reinforced concrete bridge work. Location Eastern Pennsylvania. Send complete resume of record, recent snapshot, salary and availability. P 8573, Engineering News-Record.

ENGINEER, CIVIL, experience in surveying, drafting, quantity estimating and field supervision. Write P.O. Box 755, Langley Field, Va.

WANTED CHIEF DRAFTSMAN

age 25 to 50, structural design background with broad supervisory design experience on tunnels, bridges, harbors and municipal work, by Southern engineering firm. Must be able to work with management, lead men and get results. Salary commensurate with ability. Submit record education, experience, availability and references to

P-8532, Engineering News-Record
520 North Michigan Ave., Chicago 11, Ill.

POSITIONS VACANT

STRUCTURAL DETAILERS—Checkers. Paid holidays. Vacation. Ralph Rinker, 572 Bellevue Ave., Trenton 8, New Jersey.

WANTED: GENERAL Superintendent and Quarry Foreman with granite experience. Two year job in Southeast. State salary and experience. P-8581, Engineering News-Record.

SELLING OPPORTUNITY OFFERED

SALES ENGINEER With engineering or architectural training. Experience in sales and estimating of reinforcing bars and steel windows preferred. Location Southeast. State: salary, age, experience, availability and enclose recent snap shot. Southern G F Company, 263 Decatur St., S. E., Atlanta, Georgia.

POSITIONS WANTED

HARD HITTING Construction Superintendent available now; age 41; married and 2 children; good organizer; not afraid of hard work; can handle men and obtain good results; go anywhere in United States; specializing large housing projects. PW-8519, Engineering News-Record.

PROJECT AND Office Engineer, age 35, will exchange 13 years varied experience in heavy and industrial construction, design and estimating for responsible position that will allow permanent headquarters. Qualifications include Civil Engineering Degree, Professional Registration, and several years in responsible charge of major work. Highest references can be furnished. Available on reasonable notice. Salary commensurate with position, but a minimum of $7500 per annum required. No foreign assignment considered. PW-8517, Engineering News-Record.

LANDSCAPE ENGINEER, 29, B. S. in Landscape Architecture. Experience planning, survey layout, and development of parks, house and apartment developments. Little or no travel desired. Location immaterial. PW-8365, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT: over 15 years experience in commercial, industrial, and governmental work. Excellent references. PW-8317, Engineering News-Record.

CIVIL STRUCTURAL Engineer, registered. Design and fabrication background. Available for supervising position only. PW-8298, Engineering News-Record.

CIVIL ENGINEER—Graduate, Registered, age 39, desires connection with construction or engineering firm in supervisory capacity. Wide experience in general construction, principally industrial buildings and facilities. Interested in position of responsibility. PW-8356, Engineering News-Record.

PLANT ENGINEER, M.E., Graduate, married, age 30. 30 months plant engineer, job estimating, maintenance, plant construction, production surveying. 5 years air craft and engine maintenance. Desire permanent position. PW-8333, Engineering News-Record.

SUPT. SHAFT, tunnel, sewer, open, closed. Dam, quarry, general excavating rock. PW-8373, Engineering News-Record.

(Continued on the opposite page)

SEARCHLIGHT SECTION

POSITIONS WANTED
(Continued from opposite page)

CIVIL ENGINEER, 20 years experience in bridges, highways, sewers, airports; design, construction and administration. Desires permanent position. Mid-West preferred. PW-8498, Engineering News-Record.

PROJECT MANAGER or General Superintendent with broad managerial experience in heavy construction. Have well trained organization. Available about April 1st; domestic or foreign assignment. PW-8405, Engineering News-Record.

SUPT. OR Assistant, shaft, tunnel, dam; quarry, sewer, tunnel, mine, shaft pit, rock specialist. Speak Spanish. Central South America. PW-8372, Engineering News-Record.

SUPERINTENDENT INDUSTRIAL buildings, water treatment and sewage plants, heavy foundations, hangars and timber structures. Moderate salary, available at once. PW-8493, Engineering News-Record.

CIVIL ENGINEER Graduate—Registered and experienced mining engineer. Age 27. Domestic or foreign location; single, no dependents and available on short notice. PW-8480, Engineering News-Record.

GENERAL FOREMAN, shaft, tunnel, quarry, dam, sewer, close, open. General excavation rock Speak Spanish. PW-8374, Engineering News-Record.

CIVIL ENGINEER—Graduate-Registered, 30 years age, 8 years experience location and topographic surveys, highways, pipelines, heavy construction. Desire position with contractor or engineer in California or nearby state. Available immediately. PW-8566, Engineering News-Record.

CONSTRUCTION SUPT. Civil engr. graduate; 21 Experience includes Field Supt. on large building project. Carpenter and Concrete Foreman on various heavy construction projects. 3½ years Navy Seabees officer. Presently building estimating. Desire permanent association with heavy-building construction contractor in field supervision where opportunity exists for progressive responsibility. PW-8567, Engineering News-Record.

BUILDING: PROJECT Manager graduate Civil Engineer licensed in several states, 25 years' experience building contracts of all types and similar structures, excellent estimator, purchasing, subletting, coordinator Midwest or East. Permanent position. PW-8492, Engineering News-Record.

SURVEYOR, DRAFTSMAN, title surveys experience—construction work. PW-8574, Engineering News-Record.

EXPERIENCED CONSTRUCTION engineer, capable physically and fully qualified on streets, roads, sewers and sewage disposal, and buildings, desires position where a better knowledge of construction kinks counts. Able to design. Wage to be negotiated, but not under $450.00 per month, plus travel expense. Box 81, Alcoa, Tennessee.

CONSTRUCTION ENGINEER—Field, Administrative, over 30 yrs. experience organizer, liaison, cost and progress scheduling, Grad. Engr. Licensed, Former positions designer, const. supt., chief engr., project mgr., Industrial, heavy const., housing. Available 3 weeks. U. S. PW-8538, Engineering News-Record.

ENGINEER EXECUTIVE: Structural Engineer holding professional licenses in principal states, having broad experience in all types of building construction from inception to completion, involving design, negotiation and awarding contracts, inspection and job coordination. For past six years officer and chief engineer of large engineering firm. PW-8377, Engineering News-Record.

IS YOUR Need a technical writer, office engineer, sales representative? Let me apply to your problem 15 years engineering experience, including communications, marine, utility and land development. Complete resume furnished at your request. PW-8530, Engineering News-Record.

Don't forget the **Box Number**

WHEN answering the classified advertisements in this magazine, don't forget to put the box number on your envelope. It's our only means of identifying the advertisement you are answering.

POSITIONS WANTED

PROJECT MANAGER: General, Job Superintendent; 30 years experience; heavy and light construction; housing; apartments; schools; hospitals; office buildings; chemical; industrial plants; powerhouses; handle all trades including mechanical and allied work. PW-8576, Engineering News-Record.

WORK WANTED

PLUMBING SUPT. and two first class pipe fitters with years of actual experience on all types of heavy construction, such as refineries, power houses, filtration plants, housing projects, sewer and water services are now available for foreign service anywhere in South or Central America. WW-8570, Engineering News-Record.

SPECIAL SERVICE

Let us handle your wire rope

cable splicing problems; chokers, slings, pendants, guys, etc. SS-8425, Engineering News-Record.

SITUATION WANTED

By three 13 cu. yd. Bottom Dump Euclids. Experienced in heavy construction and willing to work around the clock. Ready for hire or adoption.

BRANDEIS MACHINERY & SUPPLY CO., INC.
Brook & Warnock St.
Phone CAlhoun 4741 Louisville 8, Ky.

WANTED

2¼ yd. Clam Shell Bucket
⅜ yd. Backhoe for Bay City Model 30
35 ft. Lattice Boom for Northwest Model 25

"STONE THE CRANE MAN"
415 Brainard Ave. *Temple 1-2515* Detroit 1, Mich.

WANTED

1—Good Crane on rubber for ½ or ¾-yd. Clam
1—25-ton Trailer for moving Shovels and Bulldozers

H. E. BUNCE Waverly, New York

WANTED
CRANE

3900 MANITOWOC for steel erection, preferably with HBIS Cummins engine and torque converter.

W-8421, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

WANTED
DROP HAMMER

4,000-5,000 lb. class, in good condition, and follower block for steel sheeting and wood piles. To fit leads for Vulcan ☒1. Drop hammer without follower block acceptable.

LOUIS GARAVAGLIA
Center Line, Michigan

WANTED

40–45 cu. yd. Covered Bin. To be used to handle dolomite powder, cement, etc. Spot Cash.

W-8477, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

1 Model 30 Bay City Combination Dragline and Clamshell—U-21 International gas engine. Complete with LaCrosse skeleton trailer, pneumatic tires and oscillating axles. New 1942.

1 Used Model 45-B Bucyrus-Erie Combination Dragline and Clamshell—33" wide crawlers (17' long), D-17000 Caterpillar Diesel Engine, 2 cu. yd. dragline and clamshell buckets.

1 Used Model 80-D Northwest 2½ Yd. Shovel — Murphy engine, standard crawlers.

1 Type 1201 Lima Dragline—long crawlers, wide treads, 100' boom, Cummins Engine, light plant, 3½ yd. dragline bucket. Used 16 months.

1 Used Bay City ⅜ Yd., ¾ Swing, Tractor Model Shovel—Allis Chalmers Engine, standard crawlers.

E. F. MARSH CO.
4030 Chouteau Avenue
ST. LOUIS 10, MISSOURI

FOR SALE

One D-6 modified tractor equipped with Hough front end shovel and backfiller blade.

This machine has been used only two days.
ADDRESS BOX 8 NORTHSIDE STATION ATLANTA, GA.

UTILITY TRUCKS

14 Fords and Brockway's

With power winches & derricks. Were used by New England Telephone Co. Trucks in A1 condition. Bodies and equipment may be transferred to new chassis. Reasonably priced.

WARREN E. McCARTHY
241 Mystic Ave Medford, Mass.
Mystic-6-7346

WANTED
HYSTER TOWING WINCHES MODELS D8N - D7N - D6N

W-8376, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

WANTED:
½ yd. Backhoe for 515 Unit Shovel
⅜ yd. Backhoe for Hanson Model 65
Low Bed Trailer 20 to 40 Ton
FOR SALE:
1 Fruehauf Pole Trailer (Telescope 20 to 40 ft) Air Brakes
2 30 ft Trailer chassis, air, 12:00 Tire, 25 Ton, Unused
1 Cletrac Tractor, gas, Wis. Motor, 12 Volt Starter
W-8313, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

WANTED
2—H. D. 5 Allis Chalmers Tractors (bare)
1—T. D. 9 International Tractor (bare) Must be new.
1—D. 7 Caterpillar Tractor with Superior & Cardwell side-boom.
1—D. 7 Caterpillar Tractor with cable angledozer. D. 7's must be T Model and under 1500 hours.
FRANK A. BARKEY
851 Coxwell Avenue Toronto 6, Ontario

CRACK-PROOF WINDOWS

for equipment, spotlight lenses and transparent blast shields; cut to your special size and shape from *war salvage plastics* 3/16" thick and not over 12" x 17". Send paper pattern and we'll send estimate. Prompt shipment by mail on small orders. Low prices.

MARSTON MFG. CO., Marston, Mo. Tel. #471

FOR SALE AT A RIGHT PRICE:

1—Sterling Diesel Tandem Tractor with a new H.B. 600 Cummings Motor. Tractor completely rebuilt two months ago by Sterling Motors.
1—90 Ton Rogers "I" Beam Trailer.
1—Rogers Low-boy with 80 Ton Drop Deck. 750x18 Tires.

WANTED:

1—Model 32 Hanson Shovel Front.

Write **T. J. KILMAIN SALES CO.**
NORTH MT. VERNON AVE. UNIONTOWN, PENNA.
or call Uniontown 5400

FOR SALE

Three caterpillar DW10 with Athey side dump Pd-10. 10 yard rock wagons. Machines new 1946. Good operating condition. Located near St. Louis. Price $2,500.00 each.

EUCLID SALES & SERVICE Inc.
5231 Manchester Ave.
St. Louis 10, Mo.

NEW PARTS

FOR

Tractors, Graders, Scrapers,
Shovels, Cranes,
Trench Diggers, etc.

(Allis Chalmers, Caterpillar, International, Barber-Green, Insley, Buckeye, Northwest, Loraine, Turnapull.)

Cutting Edges All Sizes—Fairleads

CEMENT MIXERS
2 Ransome and 1 Rex
Excellent Condition

JULIUS HEBENSTREIT, INC.
56-15 58th St. Maspeth, L. I.
Tel. DAvenport 6-1461
Cable: Habenjul New York

FOR SALE

1—Northwest Model 80D-2½ cu. yd. crawler shovel, crane/drag combination. Murphy Diesel engine.
2—Northwest Model 25 crawler pullshovel crane combination, diesel engine.
1—Northwest Model 25 crawler cranes, gas engine.
1—Northwest Model 25 diesel truck crane, 60' boom.
1—Bucyrus Erie 38-B 1½ cu. yd. crawler shovel, General Motors diesel engine.
1—Marion Model 371 crawler crane/drag combination—gas engine.
1—Manitowoc Model 2000 crawler crane/drag combination—diesel engine.
1—Lima Paymaster crawler pullshovel crane combination—gas engine.
1—Lorain 1¾ yd. crawler diesel shovel.
1—Lorain Model 40 Truck Crane, 35' boom mounted on 10 wheel Mack.
1—P & H ½ cu. yd. crawler pullshovel—gas engine.
1—Koehring Model 205 cruiser crane.

HODGE & HAMMOND, INC.
1100 E. 156 St., New York 59, N. Y.

FOR SALE

1—TD8 International Tractor w/Bucyrus Bull Grader
1—T8 International Tractor w/Bucyrus Bulldozer
1—Barber-Green Ditcher 44C
1—Insley Shovel/Backhoe Combination
1—18 Yard Woolridge Scraper
1—3 wheel 7 ton roller

FERGUSON CONSTRUCTION CO.
137 Boulevard, NE
Atlanta, Georgia

FOR SALE

LINK BELT CRANE

1½ yd. (diesel)

80' boom clamshell digging bucket and fairleads. Wide cats. Completely overhauled.

NEDCAR EXCAVATING CO.
15 William St., Suite 1514, N. Y. 5, N. Y.
Hanover 2-9194

Bridge Builders &
Material Handlers

3 MANITOWOC CRANES

FOR RENT

Valley 3161

V. P. SERODINO, Inc.
7 W. North Bend Rd.
CINCINNATI 16, O.

2—Almost identical 5W Monighans 5 yard Buckets on 120 ft. Boom. Fairbanks and Morse diesel engines.
1—Lima 1201 Model 2½ yard Hi-Lift
1—Lima 1201 2½ yard Hi-Lift and 3 yard dragline combination
1—Manitowoc 3500 2 yard Hi-Lift Cat. Diesel Motor
1—Model 34 Lima ¾ yard Hi-Lift Dragline combination General Motors Diesel Engine
1—Model 405 Lima 1¼ yard Cummins Diesel
1—Core Drill 2¼"—Hydraulic Feed
2—G.M.C. 503 Series Dump Trucks

Phone Rimersburg Coal Co.
RIMERSBURG, PA.

CONTRACTORS EQUIPMENT

For Sale—Direct

Allis-Chalmers Motor Grader—Mdl. AD
Mack Platform Truck—Mdl. B.Q.
7000 ft. Blaw Knox Road Forms—7" & 8"
2—LeTourneau Scrapers—Mdl. LP
5—Koehring Trail Dumps—GM Diesels
2—Morris 12" Centrifugal Pumps
Butler 105 Bbl. Cement Bin with Scales

Location — New York State

LOUIS MAYERSOHN
36 State St., Albany 7, New York

TRENCHING MACHINES

Parsons Model 21 and Model 25
Excellent Condition

EARLE EQUIPMENT COMPANY
3648 Division Ave., S. Grand Rapids 8, Mich.

TRENCHING MACHINE

Cleveland Baby Digger, Model 85, with trailer on Pneumatic tires. Serial #2385. Inquire

C. F. GILGENBACH
R. D. #1, Elyria, Ohio
Phone, Elyria 4-6148

FOR SALE

1—Euclid Loader Model BV5, Serial 5BV34 New May 1947—used on one job, 400000 cy. Price—$13,000
7—Terra Cobra Scrapers, 150-HP Cummins engines. These machines new 1946-1947. Less than one year work. Latest Improvements including cabs, 12-c.f. air compressors and 24-V generators, drive chains enclosed. All have been overhauled and appearance like new. Will sell in lot or separately.
Price $16,000 each

All above subject to prior sale and F.O.B. St. Paul, Minn.
Terms can be arranged

Address
R. M. Knox—P. S. Crooks
424 Endicott Bldg. St. Paul, Minn.

FOR SALE

1 Model 3500 Manitowoc Shovel D-17000 Caterpillar Motor, 45 Ft. boom, 35 ft. stick, and 100 ft. crane boom with fair lead attachments. Serial #3552.
1 Model 3500 Manitowoc Shovel D 17000 Caterpillar Motor, 45 ft. boom, 35 ft. stick. Serial #3606.
1 Model 820 Lorain Shovel, 2 cu. yd., D 13000 Caterpillar Motor. Serial #17,718.
1 D-8 Caterpillar Tractor with LeTourneau hydraulic blade. Serial #2U-868.
3 D-8 Caterpillar Tractors with Caterpillar cable blades. Serials #2U-1395, #2U-1500, #2U-2291.
1 T D International Tractor with Bucyrus Erie blade. Serial TD-R-4042-T4.
1 LeTourneau Dozer Serial #LD-2371-C2C. New August 1948.

We own the equipment we advertise.

CHARLES P. ALLEN, INC.
1201 Childs Ave. Drexel Hill, Pa.
Tel. Phila. Sunset-7910.

FOR SALE OR RENT

Link Belt Truck Crane

New 1947, T 90—Sectional Boom up to 122 ft.—Back Hoe with High Gantry and Extra Counter Weight—Clam Shell and 3,000 LB. Vulcan Drop Hammer with Leads. Used about six months.
PH-7325, Engineering News-Record
330 West 42nd Street, New York 18, N. Y.

FOR SALE

Northwest #25 ¾ yd. crane, ser. #5530, in good condition, 35 ft. boom, fairleads, shovel front, gas engine.....$8,500.00

AMERICAN CONSTRUCTION CO.
RFD 4, Columbia, S. C. *Phone 2-1840*

RAIL
STEEL PLATE
STRUCTURALS, PIPE,
TUBING, WIRE ROPE,
FERROUS AND NON-FERROUS SCRAP

BOUGHT-SOLD
LIQUIDATED

DULIEN STEEL PRODUCTS, Inc.
of Washington
9265 E. Marginal Way • Seattle 8, Wash. • LAnder 6000

RAILS-TIES
TRACK ACCESSORIES

RAILS New and Relaying

TRACK ACCESSORIES

Splice Bars	Car Stops
Bolts & Spikes	Car Movers
Tie Plates	Derails
Gauge Rods	Bumping Posts
Frogs & Switches	Rail Benders
Switch Stands	Track Tools

From 5 Warehouses
- Prompt Shipments
- Fabricating Facilities
- Trackage Specialists

ADDRESS THE FOSTER OFFICE NEAREST YOU!

L. B. FOSTER CO.
NEW YORK CHICAGO HOUSTON
PITTSBURGH SAN FRANCISCO

RAILS - ANGLE BARS
TIE PLATES

Write for Regular Bulletins of
CURRENT LISTINGS
Complete Range of Sizes
Always Available
RAIL DIVISION

COMMERCIAL METALS
Company
LATIMER AT CORINTH, P.O. BOX 1046, DALLAS

170,000 6x8-8' RAILROAD TIES
PRESSURE CREOSOTED — TOP QUALITY — FROM WELL MAINTAINED GRAVEL BALLAST TRACK.
One of the finest offerings of used ties ever to reach open market. All late insertions—several thousand 1948. All Engineer inspected, priced below market and available for prompt shipment.
Ask for our LOW DELIVERED PRICES. If you are in a hurry, wire us "collect."

GILLIS AND COMPANY
Railroad Ties Since 1892
29 EAST MADISON ST CHICAGO 2

WE OWN AND OFFER FOR SALE

TRACTORS

CATERPILLAR	ALLIS CHALMERS	INTERNATIONAL
D8 D7 D6 D4	HD14 HD10 HD7	TD18 TD14 TD9 T9

CRANES & SHOVELS

NORTHWEST 6	BUCKEYE 70
NORTHWEST 25	LORAIN 40
UNIT 514	LORAIN L82
P & H 655	KOERHING 604
P & H 855	INSLEY K12
P & H 255A	OSGOOD 200

TRUCKCRANES

MICHIGAN T6K MICHIGAN TM16 QUICKWAY E

MOTOR GRADERS

CATERPILLAR NO. 12	ADAMS 412H
GALION 101	AUSTIN 99M

SCRAPERS

SUPER C TOURNAPULLS	SLUSSER McLEAN
LE TOURNEAU LS, LP	LaPLANTE CHOATE C84
WOOLDRIDGE BBS, BBU	BUCYRUS ERIE S90, G44

DITCHERS

BARBER GREENE 44C CLEVELAND 110 BUCKEYE 12

ROAD ROLLERS ROOTERS
SHEEPSFOOT TAMPERS PORTABLE CRUSHERS
CLAMSHELL & DRAGLINE BUCKETS

IMMEDIATE DELIVERY FROM OUR SAN FRANCISCO WAREHOUSE

ALSO RAILS, RAILROAD EQUIPMENT, CAR PARTS, STEEL

Phone, Wire, Write

HYMAN-MICHAELS COMPANY

122 So. Michigan Avenue	2200 Jerrold Avenue
Chicago 3, Ill.	San Francisco 24, Cal.
Wabash 2-4911	Mission 7-3631

For Sale 10" HYD. DREDGE

DIESEL DRIVEN 2-Section Steel Hull, 45' x 18' x 4' Cooper-Bessemer, 275-HP., Engine Steel House: Good Condition.

CHARLES WEAVER, 4145 Penobscot Bldg., Detroit, Mich.

FOR SALE

2—50 KW-3 Phase, 60 cycle 220 volt Superior 6-cylinder Diesel Generator Sets complete with 24 volt Starters & Generators, mounted on heavy Steel frame, condition equal to new.

Priced low for quick sale

HARLAND G. RICE, INC.
880 River Road Edgewater, N. J.

FOR SALE

6 Transit Mix Trucks, Macks, Smith—2 yard Mixers

FRAZIER-DAVIS CONSTRUCTION CO.
1319 Macklind Ave. St. Louis, Missouri
or
1 East 43rd Street New York, N. Y.

FOR SALE

Immediate delivery

From our own warehouse new and used

Wide Flange Beams

15 pcs.	8" BPS Beams	36#	60'
30 pcs.	10" BPS Beams	42	60/65'
75 pcs.	10" BPS Beams	49	40'
18 pcs.	10" BPS Beams	54	46/48
35 pcs.	12" WF Beams	36	19'10"
20 pcs.	12" BPS Beams	53	46/48'
21 pcs.	12" BPS Beams	65	36'
10 pcs.	12" BPS Beams	65	50'
24 pcs.	21" WF Beams	112	40'
22 pcs.	24" WF Beams	100	30/67'
7 pcs.	30" WF Beams	116	35'
25 pcs.	36" WF Beams	300	40'

ANGLES—2 x 2 x ¼ to 8 x 8 x 1
PLATE—3/16" to 1½" thick
CHANNELS—4" to 15"
SHIP CHANNELS—6" to 12"

We cater particularly to engineer's and contractor's structural steel needs. We carry a complete line of new structural steel shapes, such as standard and wide flange beams, angles, channels and plate. We suggest that you contact us immediately for any material you may need.

HY DRACHMAN STEEL Corp.

Warehouse

14-23 34th Avenue Astoria, L. I.
AStoria 8-8023—8096

Main Office

563 E. Tremont Ave. N. Y. 57, N. Y.
CYpress 9-5440-1

• FOR SALE •

HOLMES
ENDLESS ROPE

CAR HAUL MACHINE

WITH MOTOR, ELECTRICAL EQUIPMENT AND HAULAGE CABLE,
Complete with rope grips.

Direct Inquiries to:

RAIL TO WATER TRANSFER CORPORATION
101st & Calumet River,
Chicago 17, Illinois

FOR SALE OR RENT
ALL LATE MODELS

Lorain 79 Diesel 1½ cy Shovel & 60' Crane
Northwest 4 Crane & 1 cy Backhoe
Northwest 25—¾ cy Backhoe & Crane. New
Lorain 30—½ cy Shovel, Backhoe & Crane
Insley Model 'K' Truck Crane, ½ cy. 28 beam
Cat. D-7 hyd and cable bulldozers 3T Series
International TD-18 hydraulic and cable bulldozers. Built 1948
International TD-14, practically new
L and TD-9 bulldozers. Built 1947
Caterpillar D-4 hydr. bulldozer w/Hyster winch
ALL CAREFULLY SHOP-REBUILT
NEW PAGE and HENDRIX dragline buckets—1 cy & 1½ cy Cap. under list prices.

BENDIX MACHINERY CO., INC.
401 Broadway, New York 13, Tel: Canal 6-5693

Village of Williston Park, Nassau County, New York
Will sell to highest bidder
STANDARD LIGHT DUTY
"Truscon"
Flood Light Tower

60 ft. high, galvanized structural steel, angles bolted. Can be shipped entirely knocked down, in 3 sections or completely assembled. Complete with ladder, railing and platform. Good condition. Shipping weight approx. 3,300#. Used for flood lights or fire siren. To be removed by buyer.

FOR SALE
One Allis-Chalmers model HD 10 W tractor, equipped with Baker model 338A gradebuilder.
Used about six months.
ADDRESS BOX 8 NORTHSIDE STATION
ATLANTA, GA.

USED CRUSHERS FOR SALE

Gruendler Hammermills—Two (2) Model 2X and One (1) Model 3X. All in good condition and priced for quick sale.

Telsmith Semi-Portable Gravel Plant complete with crushers, screens, conveyors. Two years old. Priced to sell.

Please write for information on other crushers, feeders and conveyors.

E. F. MARSH COMPANY
4030 CHOUTEAU AVENUE
ST. LOUIS 10, MISSOURI

FOR SALE
One front end shovel attachment for Insley model KL ⅜ yard machine. One front end shovel attachment for Lima ¾ yard Paymaster.
These attachments have never dug even 1 yd. of earth.
ADDRESS BOX 8 NORTHSIDE STATION
ATLANTA, GA.

BRAND NEW

12 VOLT STARTERS

Leece-Neville (Back Geared) Heavy Duty. Weight 35 lbs. ea. Guaranteed to fit any 12-volt system or mony refunded.

Price $25.00 Each

A. L. GUILLE MACHINERY CO.
1006 44th Street
Norfolk, Virginia
Phone 4-9453

FOR SALE
1 D-8 with D.D.P.C.U. only....$6,500.00
Serial 1 H 2502
1 D-7 with D.D.P.C.U. only....$5,500.00
Serial 7 M 3793
GOOD CONDITION — READY TO WORK
THE GRANDVIEW CONSTRUCTION CORP.
740 South Fulton Ave., Mount Vernon, N. Y.

ELECTRIC STRIPPING SHOVEL

FOR SALE

Bucyrus 200-B equipped with crawlers and 10 yd. dipper for loading coal. Good condition, will make excellent 5 yd. stripping shovel.
Foley Brothers, Inc., Colstrip, Montana

PILING

FOR SALE
BACK HOE
One practically new Koehring yard and one half, model 605 with 65 ft. boom, drag line attachment and bucket for list price less discount.
This machine only used three days as back hoe, no days as dragline.
ADDRESS BOX 8 NORTHSIDE STATION.
ATLANTA, GA.

NEW AP3 PILING

in 20 and 40 ft. lengths.

HENRY LEVIS & CO.
Commercial Trust Bldg., Philadelphia 2, Pa.

SEARCHLIGHT SECTION

FOR SALE

BATCH PLANT

Cement and aggregate Batch Plant, 160 ton, 4 compartment bin, 600 barrel silo, 3½ yard wet mix hopper, 2 yard Koehring Tilt-Type Mixer. Complete. Purchased new May 1948.

CRANES

Colby Model 200 electric powered Whirley cranes, 45 ton at 30 foot radius. Excellent condition.

PACIFIC BRIDGE COMPANY
333 Kearny Street San Francisco, Calif.

FOR SALE

One 1½ yd. Northwest Shovel with Caterpillar D-13000 Engine.

RYAN BROS., INC.
122 S. 4th Street Clearfield, Pa.

150 CRANES

CRAWLERS — CRUISERS — TRUCKS

LORAINS - LINKBELT SPEEDERS - P & H
BYERS - NORTHWEST - BAY CITY
OSGOODS - MARIONS - BUCKEYES
INSLEYS - UNITS - HANSON
QUICKWAYS - OLIVERS

As Is.

½ Yard, $2,500.00 to $3,500.00
¾ Yard, $3,500.00 Up —

ELLIS-NOVACK CO.
1925 N. BUENA VISTA BURBANK, CALIF.
Phone Charleston 8-1641

FOR SALE

2 D-8's 8R & 1H series w/dozers
2 D-7's, 4T & 7M series w/dozers
1 D-4, 2T series w/dozer
1 Caterpillar model #12 Grader
Truck Crane, Quickway mod. E
2 Diesel Rollers, Galion & Huber 10 ton
Machinery Trailer, 30 ton
3 International T-9 Swing Cranes
Tractor, TD-14 w/Hughes-Keenan Crane
Asphalt Distributor, 800 gal.
Cement Mixer, 2 bag, on rubber tires
2 TD-18's, 1 TD14 w/blades
Also other items.
All very clean, some new
For details and pictures:
Write Box 114 Miami Springs, Fla.
Phone Miami, 78-0243

COMPLETE GRADING OUTFIT FOR SALE

ONE PACKAGE AT ONE PRICE
consists of

2 "Caterpillar" Diesel D8 Tractors
1 "Caterpillar" Diesel No. 12 Motor Grader
2 Model "C" Tournapulls
2 Wooldridge 12-yard Scrapers
1 General Dragline and Shovel, ¾ yd.
1 Minneapolis-Moline wheel-type Tractor
Write for complete description and price

HOBSON AND COMPANY
2131 Washington St. Kansas City, Mo.

EQUIPMENT FOR SALE

Priced to sell quickly

1—Koehring 703 Crane 2-yd. machine with Caterpillar D-13000 engine. Long and wide pads.
1—Lorain 82, 2-yd. shovel with Caterpillar D-13000
2—Caterpillar Model 12 graders with scarifiers
2—Buckeye shovels Model 70 with shovel fronts
2—TD-14 International tractors with swing crane attachments
1—Buckeye rotary type ditcher with Caterpillar D-4400 engine—70 hours
1—P&H 655A shovel front new and complete
1—P & H Truck Crane Model 255A
All items have seen very little use and are priced to sell quickly.

WANTED TO PURCHASE
1 set Lorain 82 tracks.

HELLMAN EQUIPMENT COMPANY
Call Mr. Sheff at New York Plaza 5-5800, Ext. 1205
or
Mr. Hellman at Roselle, New Jersey, 4-0785M

ADVERTISERS IN THIS ISSUE

Allis Chalmers Mfg. Co. ..... 2nd Cover
American Hoist & Derrick Co. 19
American Hot Dip Galvanizers Assn. 28
Arabol Mfg. Co. 74
Arco Co., The 73
Armco Drainage & Metal Products, Inc. .. 4
Armstrong Bray & Co. 74

Bay City Shovels 46
Beech Aircraft Corp. 8
Blaw-Knox Div. Blaw-Knox Co. 85
Boca Grande Hotel 66
Boston Woven Hose & Rubber Co. 64

Cast Iron Pipe Research Assn. 54, 55
Ceco Steel Products Corp. 48, 49
Cement Gun Co. 75
Chevrolet Div. General Motors Corp. 23
Chicago Bridge & Iron Co. 3
Continental Steel Corp. 75

Dobbins Mfg. Co. 74
Dow Chemical Co. 33

Ellicott Machine Corp. 73

Firestone Tire & Rubber Co. 34

Gar Wood Industries, Inc., Findlay Div. 1
Golden-Anderson Valve Specialty Co. 31
Gunite Concrete & Construction Co. 71

Harbor Plywood Corp. 77
Hayward Co. 71
Heltzel Steel Form & Iron Co. 39
Hines Lumber Co., Edward 69

Imperial Pencil Tracing Cloth 2
Ingalls Iron Wks. Co. 67
Irvington Form & Tank Corp. 80

Johns-Manville 20

Keasbey & Mattison Co. 83
Koehring Co. 62, 63
Kohler Co. 29
Koppers Co. 43

Leschen & Sons Rope Co., A. 59
LeTourneau, R. G. 50, 51

Malsbary Mfg. Co. 85
McCulloch Motors, Inc. 80
Monsanto Chemical Co. 38
Moretrench Corp. 84

National Terrazzo & Mosaic Assn., Inc. .. 71

Ozalid, Div. of General Aniline & Film .. 70

Preformed Wire Rope Information Bureau 78

Quaker State Oil Refining Corp. 37

Raymond Concrete Pile Co. ..... 3rd Cover
Republic Steel Corp. 57
Roebling's Sons Co., John A. 44
Rust Oleum Corp. 81

Schield Bantam Co., Inc. 52
Sprague & Henwood, Inc. 77
Standard Oil Co. of Calif. 61
Standard Oil Co., Indiana 47
Standard Steel Wks. 66

Templeton, Kenly & Co. 77
Thermobloc Div., Prat-Daniel Corp. 30
Timber Engineering Co. 46
Timken Roller Bearing Co. ..... 4th Cover

Vickers Inc. 41

Wallace & Tiernan Co., Inc. 6
Western Concrete Pile Co. 10
Western Foundation Co. 10

Yoemans Brothers Co. 27

G. R. Ramel, Sales Manager — Howard Olsen, Business Manager

Sales Representatives—Fred G. Hudson, L. H. Hunt and H. L. Keeler, 520 N. Michigan Ave., *Chicago* 11; Ralph Dorland, 68 Post Street, *San Francisco* 4; J. L. Ballard and W. G. Payne, 330 W. 42nd St., *New York* 18; A. B. Cozzens, 17th and Sansom Sts., *Philadelphia* 3; E. E. Duff, Jr., Hanna Bldg., *Cleveland* 15; B. F. Horn, Penobscot Bldg., *Detroit* 26; W. E. Donnell, Continental Bldg., *St. Louis* 8; Charles McReynolds, 621 So. Hope St., *Los Angeles* 14; Ralph Maultsby, Rhodes-Haverty Bldg., *Atlanta* 3; J. H. Allen, Empire Bank Bldg., *Dallas* 1. Other sales offices—738-39 Oliver Bldg., *Pittsburgh*; 1427 Statler Bldg., *Boston* 16; National Press Bldg., *Washington*; Aldwych House, *London, England.*

CONSTRUCTION BUSINESS

Construction machinery shipments up 20% in '48

Shipments of excavating and earthmoving equipment totaled $522.9 million in 1948—a 20 percent rise over the previous year and a new peacetime record. Last quarter shipments of $139 million put the 1948 total at 85 percent over 1946.

Track-laying tractors showed both the largest volume and the largest gain among six types of heavy equipment included in the Bureau of Census fourth quarter tally. Shipments of these tractors increased 30 percent over the third quarter, to reach $49.8 million. Power cranes and shovels, which made up 30 percent of 1948 construction machinery shipments, climbed 11 percent in the fourth quarter to $41.2 million.

Road construction and maintenance machinery produced during 1948 was worth $119 million. This is 23 percent of total construction equipment shipped during the year, and 21 percent more than in 1947. Tractor-mounted machinery shipments at $45.4 million were 11 percent higher.

Wheel-type tractors ended the year 13 percent above 1947, despite a fourth quarter drop of 31 percent to $3.7 million. Portable well and blast-hole drills gained 24 percent over the previous year, but in the last quarter shipments fell 36 percent to $1.7 million.

Exports during this final period increased 31 percent to $23.8 million, exclusive of power cranes and shovels.

Labor competing for jobs

Wage rates for Oklahoma City, published in ENGINEERING NEWS-RECORD March 17, 1949 (page 177) have brought statements from the Associated General Contractors that hoisting engineers are actually being hired for $1.375 per hour, not the $2 and $2.25 reported. The Oklahoma City Master Plumbers Association added that journeymen plumbers and steamfitters are under contract for a wage of $2.25 per hour for an eight-hour day, not $2.50 for seven hours as reported.

The rates quoted were checked with union sources in February for March publication. The difficulty is due to the existence in Oklahoma City of both union and open-shop jobs (except for a few crafts). Bad winter weather slowed down work and there has been greater competition for jobs than at any time during or since the war, officials said.

Labor unions are making a strenuous effort to organize operating engineers, shovel, dragline and bulldozer operators and related trades. They are setting a scale of $2 per hour. Contractors are making a determined effort to lower costs and increase efficiency so that more jobs will go ahead.

To illustrate how this struggle is working out, tractor operators were reported by ENR to be getting $2. This is the union scale. However, men are working at rates of from $1.375 per hour to $2, depending on the machine, job organization, and type of work. Carpenters are paid the top union scale of $2 on the best jobs for the best men. But wages paid men on house building and small jobs dropped to as low as $1 an hour in the bad weather, and some men are now working for $1.12. The State Highway Department minimum wage scale continues at $1 for skilled, $0.60 for intermediate, and $0.40 for common. Some of their jobs operate in part at these rates. Common labor is the most variable. The rate depends on the supply and quality of men, and length of job.

Price and wage briefs

Red lead paint prices in April are down a maximum $3.50 per cwt. (an average of 14 percent) in the 20 cities covered by Engineering News-Record. **White lead** is off from $1.75 to $2.75. **Lead** prices, reflected in these drops, are now 21 percent below their March 8 level, due to light demand and cheaper scrap.

Lumber prices are down for the ninth straight month in April. The average drop in 20 cities is $1.15 below March, which brings the decline since July 1948 to 10.7 percent.

The mid-western cities of Chicago, Cincinnati, Detroit and St. Louis are the principal centers of lumber price cuts this month, with New York and Los Angeles also down. Oak **railway ties** went up 3 to 15 cents in St. Louis.

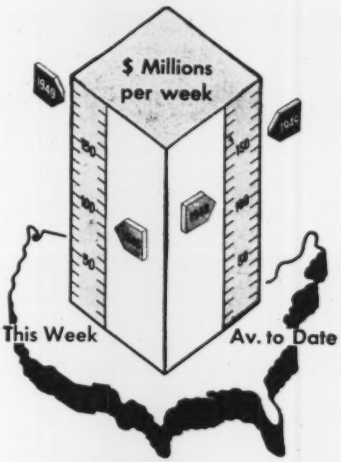
Asphalt prices are up 2 to 3 percent in Dallas, and down 8 to 9 percent in New York. This includes paving and cutback asphalt, emulsion, binders and fluxes, and road oil.

Bricks gained $6.62 per thousand in Kansas City, for both common backing and straight hard types.

Wage rates for bricklayers are up 12.5 cents hourly in Boston, while common labor gained 10 cents.

ENR INDEX NUMBERS

Index Base — 100		1913	1926
Construction Cost	Apl.'49	473.54	227.63
Building Cost	Apl.'49	351.35	189.93
Volume	Mar.'49	271	119



Activity This Week

As reported to ENR in millions of dollars

Amount of Contracts let

	Week of Apl. 7 1949	Cumulative 1949 (14 wks.)	Cumulative 1948 (15 wks.)	% chge av.wk.
Federal	$16.6	$329.6	$334.7	+5
State & Mun.	71.9	683.6	585.7	+25
Total Public	$88.5	$1,013.2	$920.4	+18
Total Private	89.7	1,037.4	816.9	+36
U. S. Total	$178.2	$2,050.6	$1,737.3	+27

Contracts by type of work

	This Week	Cumulative 1949 (14 wks.)	Cumulative 1948 (15 wks.)	% chge av.wk.
Waterworks	$2.2	$37.1	$45.0	−12
Sewerage	6.2	54.5	49.5	+18
Bridges	3.4	91.3	82.2	+19
Highways	14.1	141.2	221.1	−32
Earthwork, Waterways	5.1	173.4	154.9	+20
Buildings, Public	48.3	450.0	306.9	+57
Industrial	31.5	307.5	267.6	+23
Commercial	51.9	611.9	474.2	+45
Unclassified	15.5	153.7	135.8	+21

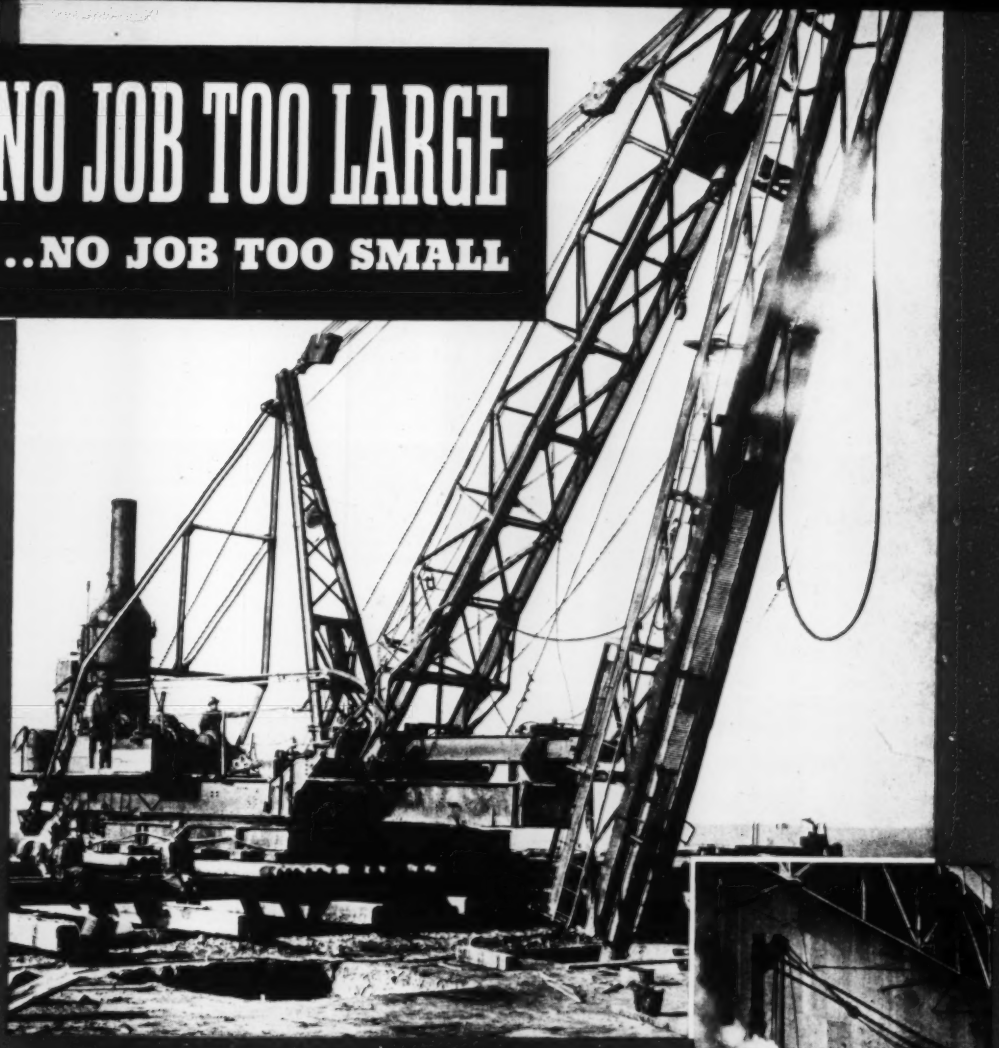
NOTE: Minimum size projects included are: Waterworks and waterway projects, $28,000; other public works, $50,000; industrial buildings, $68,000; other buildings, $250,000.

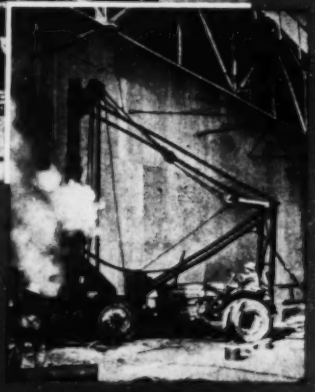
New capital for construction

	Cumulative 1949 (14 wks.)	Cumulative 1948 (15 wks.)	% chge av.wk.
NON-FEDERAL	$1,315.8	$955.2	+48
Corporate Securities	635.2	552.0	+23
State and Municipal	680.6	403.2	+80
Total Capital	$1,315.8	$955.2	+48

NO JOB TOO LARGE

...NO JOB TOO SMALL





AROUND THE WORLD

From a job of a few piles to one requiring many thousand piles, from a single caisson to a skyscraper foundation, from a simple soil investigation to a complete port development—no job is too large or too small for the Raymond organization. Specialized equipment, broad experience and highly trained personnel are your assurance of dependable work at minimum cost.

Your inquiry will receive prompt attention.

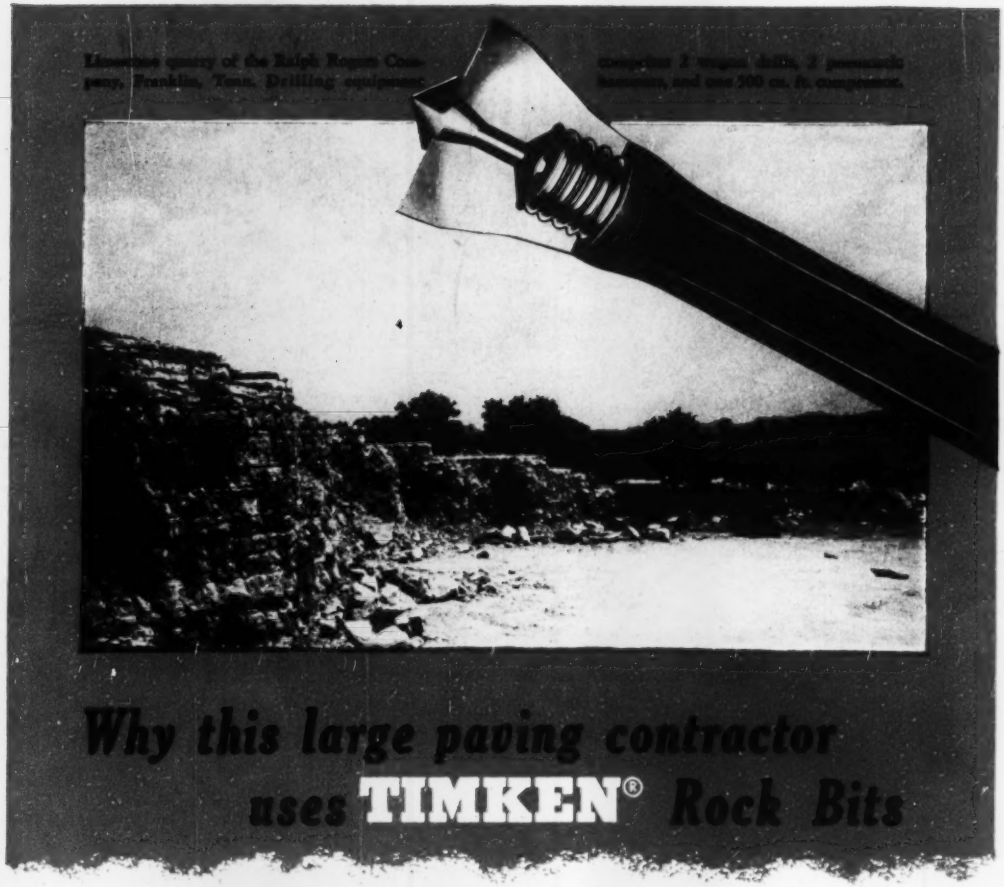
52 YEARS FOUNDED 1897 OF PROGRESS

RAYMOND CONCRETE PILE CO.

140 CEDAR STREET • NEW YORK 6, N. Y.

Branch Offices in Principal Cities of United States and Latin America

SCOPE OF RAYMOND'S ACTIVITIES includes every recognized type of foundation construction concrete, composite, precast, steel, pipe and wood piles. Also caissons, underpinning, construction involving shore protection, shipbuilding facilities, harbor and river improvements and borings for soil investigation.



Why this large paving contractor uses TIMKEN® *Rock Bits*

The Ralph Rogers Company of Franklin, Tenn., operates a limestone quarry in connection with the production of asphalt aggregate.

Rock drilling at this quarry is a 100% Timken rock bit operation because the quarry operator has found Timken rock bits superior in performance and more economical in use than the bits previously used.

Furthermore, by preventing the steel from bottoming in the bit, the Timken one piece, solid steel shoulder construction has eliminated drill steel breakage that previously was a source of delay and expense.

No matter where you are, there's a Timken rock bit distributor within telephone call. Conversion and reconditioning shops also are conveniently located for quick service. Put Timken rock bits to work now; cut drilling costs, increase production.

TIMKEN
ROCK BITS

THE TIMKEN ROLLER BEARING COMPANY
CANTON 6, OHIO - CABLE ADDRESS "TIMROSCO"